

Atlantic's [20] prefiling statement?

[21] A: [BROWN] We're not aware of anything more [22] than what it says here or what was in public [23] statements.

[24] Q: So whatever principles, as Mr. Levy was

Page 113

[1] pursuing earlier with you, Ms. Brown — whatever [2] principles underlie Bell Atlantic's decision to [3] offer certain combinations but not all [4] combinations, as far as you know, Bell Atlantic is [5] prepared to surrender those principles in exchange [6] for a commission commitment to endorse its Section [7] 271 application. Is that an accurate [8] characterization of what we're looking at?

[9] A: [BROWN] No, it's not.

[10] Q: Let me restate the question, then. In [11] New York was Bell Atlantic - New York prepared to [12] yield on whatever principles underlay its [13] resistance to providing the UNE platform in [14] exchange for a commitment by the New York [15] commission to endorse its Section 271 application?

[16] A: [BROWN] I don't believe it's a one-for- [17] one scenario here. I think it's a comprehensive [18] set of conditions that addressed a comprehensive [19] set of issues and problems in New York, and you [20] cannot do a single "in exchange for this, we got [21] that." It's just an oversimplification of the [22] agreement.

[23] Q: I understand it is a comprehensive [24] offering by Bell Atlantic, and that's what we've

Page 114

[1] got in front of us, and it goes on for 20, 30, 40 [2] pages and appendices and whatever. What I'm trying [3] to get at is what came the other way? Is there [4] anything other than the agreement, commitment by [5] the New York commission that once Bell Atlantic [6] does all of this the New York commission will [7] endorse the 271 application?

[8] A: [BROWN] We're not aware of anything [9] else, other than what's in this statement and in [10] public statements.

[11] MR. JONES: Mr. Levy, I don't know [12] what your pleasure is as to a lunch break; but to [13] the extent my pleasure is relevant, I wouldn't mind [14] one.

[15] MR. LEVY: Let's go off the record [16] briefly.

[17] (Discussion off the record.)

[18] MR. LEVY: Let's go back on the [19] record.

[20] Q: Ms. Stern, have you had occasion prior to [21] today to reread, or read, the transcript of your [22] testimony given on December 16th, 1997, in this [23] room?

[24] A: [STERN] Actually, I have not reread it

Page 115

[1] for a long, long time.

[2] Q: I was going to ask whether you had any [3] corrections to what you had testified to [4] previously; but if you haven't reread it in a long [5] time, I won't request that.

[6] In your statement at the beginning of [7] this morning you made reference to the possibility [8] of a single collocation arrangement per LATA for [9] CLECs. My understanding is that referred [10] specifically to CLECs which provide their own [11] switching functionality. Is that correct?

[12] A: [STERN] Yes.

[13] Q: And the extended-link offering is an [14] offering that is useful to a CLEC that has its own [15] switch functionality for providing local service. [16] Is that an accurate statement?

[17] A: [STERN] Yes. It would also be useful to [18] a CLEC that was just in the business of dedicated [19] private lines and didn't need to provide switch [20] services.

[21] Q: For providing local-service offerings [22] using Bell Atlantic's loops and switches, the [23] extended-link offering would not be useful in the [24] provision of that service offering by a CLEC; isn't

Page 116

[1] that correct?

[2] A: [STERN] I'm sorry, the question again.

[3] Q: Sure. For a CLEC that wants to offer [4] local service and it wants to do so by employing [5] Bell Atlantic's loops and switches, extended link [6] is not relevant to that CLEC for that purpose; is [7] that correct?

[8] A: [STERN] Correct.

[9] Q: And that CLEC would need to either [10] physically or virtually collocate in every central [11] office through which it attempted or wished to [12] serve retail customers; is that correct?

[13] A: [STERN] For the purpose of combining a [14] link and a Bell Atlantic switch port, yes.

[15] Q: And the extended-link offering I believe [16] you said is not an offering that permits ultimate [17] connection to a Bell Atlantic switch, but rather is [18] an extension of a link that would go to a [19] collocation space, collocation facility, owned by [20] the CLEC.

[21] A: Yes.

[22] Q: In the December hearing, you testified at [23] that time to various offerings that Bell Atlantic [24] was then prepared to make. And if I recall

Page 117

[1] correctly, there was actually a Bell Atlantic [2] industry forum that was scheduled around the time [3] of the December hearing, in New York. Do you [4] recall that?

[5] A: [STERN] Yes, there was something on [6] December 9th.

[7] Q: I want to start with the switch [8] subplatform that's referenced in the current [9] position statement. Can you identify what [10] components of the switch-subplatform offering [11] that's identified — I'm looking at Page 9 of the [12] Bell Atlantic position statement. What's included [13] in there that Bell Atlantic didn't state to [14] industry representatives in December that it would [15] offer to the industry on a combined basis?

[16] A: [STERN] Do you mean in the December 9th [17] industry forum?

[18] Q: If that was the date that was held. I [19] just know it was in December; I don't remember the [20] exact date.

[21] A: [STERN] The main focus of that date was [22] to demonstrate to CLECs that we had workable [23] methods and procedures if a CLEC wanted to combine [24] a link and a port through its own collocation

Page 118

[1] node. The switch subplatform, if a CLEC were using [2] that it would still need to combine that platform [3] with either our links or its own links through a [4] collocation-type arrangement.

[5] In that industry forum we didn't talk [6] about anything beyond the switch. In this we talk [7] about a comprehensive connection to everything [8] beyond the switch, including things like STPs, 911, [9] operator platforms, et cetera.

[10] Q: And isn't it correct that as of December [11] of 1997 Bell Atlantic was prepared to offer the [12] combination of elements that's reflected under the [13] heading Switch Subplatform as an offering to the [14] CLEC industry? That was available from Bell [15] Atlantic as of that time, was it not?

[16] A: [STERN] I don't know when this was first [17] available. I just don't know.

[18] Q: Given that answer, an unfair question: [19] But not only was it available from Bell Atlantic at [20] that time, but it was available at that time [21] without any mention having been made of any glue or [22] combination charge being proposed by Bell Atlantic [23] for what we're now seeing called a switch- [24] subplatform offering.

Page 119

[1] MR. BEAUSEJOUR: I'll object. You're [2] correct, Mr. Jones: It was an unfair

question.

[3] MR. LEVY: I'm happy to have a record [4] request on the previous question.

[5] MR. BEAUSEJOUR: I don't mind taking [6] a record request on the previous question.

[7] MR. JONES: I think it would be a [8] good idea if I asked a record request, on the two [9] questions, which is whether Bell Atlantic was [10] offering what is now called the switch subplatform [11] as of December of 1997; and, if not, what pieces of [12] it wasn't it offering? And isn't it the case that [13] it was making that offering without at that time [14] proposing a combination or glue charge?

[15] MR. LEVY: Fine. That will be Record [16] Request 8.

[17] (RECORD REQUEST.)

[18] Q: And the switch subplatform, Ms. Stern, [19] refers to network elements that are entirely on the [20] trunk side of the switch and out into the network [21] from the trunk side of the switch. Is that a fair [22] characterization?

[23] A: [STERN] Yes.

[24] Q: In the Bell Atlantic/NYNEX filing with

Page 120

[1] the FCC with respect to the then-proposed merger of [2] the two companies, the companies made a commitment [3] to the FCC to provide what they described as the [4] combination of unbundled network elements known as [5] shared transport. Are you familiar with that?

[6] A: [STERN] Yes.

[7] Q: Just so it's clear on the record: What [8] components of what you're now calling a switch [9] subplatform constitute what was, may still be, [10] referred to as shared transport as that term was [11] used in the commitment made to the FCC? Do you [12] understand that?

[13] A: [STERN] Just as I wasn't there in the [14] negotiation of the New York agreement, I wasn't [15] there in the negotiations of the FCC merger [16] agreement. But my understanding of the shared [17] transport referred to in that agreement is that it [18] included basically the transport of POTS-type [19] calls, if you will, like a local call or a call —

[20] Q: I missed the phrase there.

[21] A: [STERN] It included transport of a [22] POTS-type, such as a local call or a call to an [23] interexchange carrier. It did not include a [24] commitment of transport to the operator and

Page 121

[1] directory platforms, and it did not include a [2] commitment of transport to the 911 hubs, did not [3] include a

commitment of transport to databases and [4] STPs, et cetera. So this offering builds upon [5] that. It gives more than that, because it includes [6] all of those.

[7] Q: How does Bell Atlantic, can Bell Atlantic [8] provide shared transport without signaling?

[9] A: [ALBERT] You can use multi-frequency [10] signaling, which is out of band, and not use the [11] STPs.

[12] Without the STPs, we can use [13] multifrequency signaling, and that signaling for [14] shared transport. That would not have the [15] signaling links or the signaling STPs.

[16] Q: It would have a different form of [17] signaling.

[18] A: [ALBERT] In-band MF, multi-frequency.

[19] Q: You've got to have some signaling with [20] shared transport; otherwise it doesn't go [21] anywhere.

[22] A: [ALBERT] That's right, some form of.

[23] Q: On Page 10 of the Bell Atlantic position [24] statement, Exhibit BA Combo 2, Ms. Stern. I'm just

Page 122

[1] curious, the description "enhanced extended-loop [2] service": How is extended-loop service enhanced in [3] this offering?

[4] A: [STERN] I think that's just the name we [5] gave it. It has a good acronym.

[6] Q: Well, the acronym is EELS. [7] (Laughter.)

[8] A: [STERN] We chose the word "enhanced." [9] The service is what it is, as we've described it [10] here. You can call it enhanced or not, as you [11] please.

[12] (Discussion off the record.)

[13] MR. JONES: I think anything else I [14] have I don't need to ask Ms. Stern, so I can stop [15] with my questions of her and reserve for later.

[16] MR. LEVY: Ms. Barbulescu, do you [17] have any questions for Ms. Stern before she has to [18] leave today?

[19] MS. BARBULESCU: Yes, I have a few.

[20] CROSS-EXAMINATION

[21] BY MS. BARBULESCU:

[22] Q: I just have a couple of questions. In [23] the prefiling statement that Bell Atlantic [24] submitted in New York, Bell Atlantic agreed to

Page 123

[1] provide combinations of loop and transport along [2] with multiplexing and concentration equipment; is [3] that correct? If you need a reference, it's on [4] Page 10, at the bottom, cost of services, and onto [5] 11.

[6] A: [STERN] I don't see the line about [7] multiplexing and concentration equipment.

[8] (Pause.) Yes, I see that.

[9] Q: Does that commitment to provide [10] concentration equipment in New York include GR-303 [11] concentration?

[12] A: [STERN] No, the commitment that we made [13] here was getting at equipment that we currently use [14] in our network. GR-303, as Mr. Albert testified to [15] earlier, we do not use in our network today.

[16] Q: So in your opinion, technical feasibility [17] is equivalent to what Bell Atlantic utilizes in its [18] network. That's the definition of "technical [19] feasibility"?

[20] A: [STERN] No.

[21] Q: No? It seems to say here that if Bell [22] Atlantic - New York combines for CLECs unbundled [23] loop and transport elements, "including [24] multiplexing where required and when technically

Page 124

[1] feasible concentration." Is that correctly what [2] that says, "technically feasible concentration [3] equipment"?

[4] A: [STERN] Well, you read the words as they [5] appear on the page. "Concentration," I should say, [6] doesn't necessarily mean GR-303, though.

[7] Q: In your opinion, is GR-303 technically [8] feasible?

[9] A: [STERN] I think I'd like to refer that [10] one to Mr. Albert.

[11] Q: In your opinion, is GR-303 equipment [12] technically feasible?

[13] A: [ALBERT] I'm not really sure what you [14] mean by is it technically feasible. It's a [15] standard. It's a Bellcore generic spec that's been [16] developed. Manufacturers are beginning to design [17] to build for it. I don't know how you say if a [18] standard is technically feasible. It's a standard.

[19] Q: Are you aware of whether or not it's used [20] in any exchange companies' facilities or networks [21] in anywhere in the country?

[22] A: [ALBERT] I'm aware of what we do in Bell [23] Atlantic, and we're not using it.

[24] Q: I'm asking if you are aware of whether it

Page 125

[1] is employed in any other exchange company's network [2] anywhere in the country. Do you know that?

[3] A: [ALBERT] No, I don't know, outside of [4] Bell Atlantic, what others are doing.

[5] Q: Do you know whether or not it's been [6] ordered in any other juris-

diction?

[7] A: [ALBERT] No.

[8] Q: Ms. Stern, are you aware of any [9] electronic correspondence between Jack Goldberg, of [10] Bell Atlantic, and MCI's vice-president of [11] financial operations, Dennis Kern, that might have [12] discussed the New York prefiling statement?

[13] A: [STERN] No.

[14] Q: I would like you to take a look at this [15] document, if you would. This would be a response [16] submitted from Jennifer Ross, and Jack Goldberg is [17] copied on it. It's a response of an e-mail that [18] Dennis Kern sent to Jack Goldberg. Let me make [19] sure I have the right pages; I only have one copy.

[20] (Pause.)

[21] This is an e-mail correspondence [22] between Dennis Kern, of our company, and Jack [23] Goldberg and Jennifer Ross, of your company. If [24] you would turn to the tabbed page. Could you

Page 126

[1] please read the question and the response.

[2] A: [STERN] Which question number?

[3] Q: The highlighted one. It would be Page 9, [4] or Question 9.

[5] A: [STERN] Question 9, "Does the commitment [6] to provide concentration equipment found on Page 10 [7] and 11 specifically include GR-303 concentration [8] equipment in combinations of loop and transport [9] UNEs?" Answer: "If and when technically feasible [10] and subject to recovery of costs, GR-303-compliant [11] equipment falls within the scope of the commitment [12] regarding concentration."

[13] Q: Thank you very much.

[14] MR. BEAUSEJOUR: Could you provide a [15] copy of that?

[16] MS. BARBULESCU: Yes.

[17] MR. BEAUSEJOUR: If we have any [18] concerns with it, we'll address those.

[19] A: [STERN] I think there's probably a [20] broader definition of "technically feasible" that [21] that answer encompassed, which would include [22] operationally feasible and practical.

[23] Q: Thank you. Does Bell Atlantic employ [24] concentration equipment in its network?

Page 127

[1] A: [STERN] I'll refer to Don Albert for [2] that.

[3] A: [ALBERT] Only in the switches.

[4] Q: Do you employ digital-loop carrier in [5] your network?

[6] A: [ALBERT] Yes.

[7] MS. BARBULESCU: I have no further [8] questions for these two. I may have some later.

[9] MR. LEVY: Ms. Thurston, do you have [10] any questions at this time?

[11] MS. THURSTON: No.

[12] MR. LEVY: Mr. Kennedy has to leave [13] also.

[14] (Recess taken for lunch.)

[15] MR. LEVY: Let's go back on the [16] record. Welcome back, Mr. Jones.

[17] MR. JONES: Thank you very much. [18] PAULA L. BROWN, AMY STERN, [19] and DON ALBERT, Previously Sworn [20] CROSS-EXAMINATION [21] BY MR. JONES:

[22] Q: Mr. Kennedy, thanks for the [23] demonstration.

[24] A: [KENNEDY] You're welcome.

Page 128

[1] Q: In the Bell Atlantic position statement, [2] there's, as I understand it, a reference to a [3] larger version of what you've got here in the [4] hearing room; is that correct?

[5] A: [KENNEDY] That's correct.

[6] Q: This is a 250-connection unit?

[7] A: [KENNEDY] That's correct.

[8] Q: And the one referenced by Bell Atlantic [9] has 1,400-circuit capacity?

[10] A: [KENNEDY] That's correct.

[11] Q: And physically how big would that one [12] be?

[13] A: [KENNEDY] That unit would be 36 inches [14] in height. This one you're viewing here is 24 [15] inches in height.

[16] Q: The same width?

[17] A: [KENNEDY] Same width, 23-inch rack- [18] mountable.

[19] Q: The \$33,000 purchase price you gave was [20] for the bigger unit?

[21] A: [KENNEDY] That's correct.

[22] Q: And that's an uninstalled price?

[23] A: [KENNEDY] That is equipment only, that's [24] correct.

Page 129

[1] Q: Do you offer an installed package with an [2] installed price?

[3] A: [KENNEDY] CON-X does offer support [4] services as far as installation goes. It is [5] typically priced, quoted on a per-job basis.

[6] Q: To your knowledge, does Bell Atlantic [7] have any of these pieces of equipment installed in [8] its network anywhere?

[9] A: [KENNEDY] For this purpose? No, not at [10] this time. But they do have an outside-plant [11] cross-box installed, yes; same device.

[12] Q: Here in Massachusetts?

[13] A: [KENNEDY] No, the Washington, D.C. area.

[14] Q: I think Mr. Albert stated earlier that [15] Bell Atlantic has purchased two of them. Does that [16] sound right to you?

[17] A: [KENNEDY] Well, there's actually three [18] robots in this particular application.

[19] Q: In the Washington application?

[20] A: [KENNEDY] Yes.

[21] Q: The 1400-circuit capacity, is there any [22] limitation on the types of circuits that can be [23] cross-connected using the — what's the big one [24] called?

Page 130

[1] A: [STERN] It's the M400 chassis, and it's [2] equipped with the 1400 panel, is what we're calling [3] it. It's a CLEC-specific application.

[4] It might help to describe the matrix [5] itself for you.

[6] Q: No, before you do that: I just want a [7] label to put on it so we can be talking about — [8] the 1400-circuit unit, what can we call it?

[9] A: [KENNEDY] M400-1400.

[10] Q: The M400 is the chassis and the 1400 is [11] the circuit capacity?

[12] A: [KENNEDY] That's correct.

[13] Q: What kinds of circuits?

[14] A: [KENNEDY] The device is designed as an [15] analog cross-connect device. The panel has been [16] tested to 25 megahertz. It typically switches — [17] can handle ISDN, T1, POTS circuits.

[18] Q: When you say an analog cross-connect [19] device —

[20] A: [KENNEDY] As opposed to a digital.

[21] Q: In what manner is it analog?

[22] A: [KENNEDY] Meaning it places a physical [23] metallic connection that's designed to be in the [24] outside plant arena, hooking copper wires

Page 131

[1] together.

[2] Q: And could you connect and disconnect all [3] versions of ISDN circuits through this device?

[4] A: [KENNEDY] Yes. I mean, if it's not [5] above the 25 megahertz, sure.

[6] Q: It is what I would call an [7] electromechanical device; is that an accurate [8] description?

[9] A: [KENNEDY] That's correct.

[10] Q: So it doesn't provide — in fact, one of [11] the virtues that you described is the fact that it [12] provides mechanical connections and [13] disconnections.

[14] A: [KENNEDY] That is correct.

[15] Q: To provide service in an end office, [16] let's say a typical end office in downtown Boston, [17] if a CLEC wanted to use this equipment to have the [18] capacity to offer service to, say, 20,000 end users [19] through a particular end office, is it simply a [20] matter of arithmetic to divide 20,000 by 1400 to [21] determine how many of the devices you would need in [22] order to have that capacity?

[23] A: [KENNEDY] That is correct.

[24] Q: So to make it easy, if the CLEC wanted

Page 132

[1] capacity to service 14,000 end users, it would need [2] ten of these devices.

[3] A: [KENNEDY] That is correct.

[4] Q: With an equipment cost of \$200,000.

[5] A: [KENNEDY] That's correct.

[6] Q: And an installation cost on top of that.

[7] A: [KENNEDY] That's right.

[8] Q: This may not be a question that ought to [9] go to you. But my understanding is that these are [10] being cited, touted by Bell Atlantic for virtual, [11] as opposed to physical, collocation capabilities; [12] and if that's the use to which they'd be put, [13] they'd be located not in a CLEC's collocation cage, [14] but somewhere in Bell Atlantic's own central-office [15] space. Is that your understanding of the intended [16] use?

[17] A: [ALBERT] Bell Atlantic's position on [18] that would be that you could use it for physical or [19] virtual. It's not limited to virtual only. It [20] works well in that situation because of the [21] remote-control capabilities. But if the CLEC [22] wanted to use it for physical, they certainly would [23] be able to.

[24] MR. LEVY: Excuse me, Mr. Jones.

Page 133

[1] Mr. Kennedy, you said that capacity is 1400 [2] subscriber pairs. Is that how you would recommend [3] using that machine? In other words, would you [4] fully fill it up to all 1400, or do you leave [5] reserve, or is it actually bigger than 1400 so it [6] has some reserve?

[7] WITNESS KENNEDY: The way that would [8] work, that particular panel design has 1400 [9] subscriber circuits entering it, it has 1400 ILEC [10] positions entering it, and it has 1400 CLEC [11] positions entering it. So what the robot ends up [12] doing is moving the pin from the ILEC-to-subscriber [13] position to the CLEC-to-subscriber position. So [14] they are unique to each other. In other words, [15] CLEC Circuit 5 is associated with Subscriber [16] Circuit 5 is associated

with ILEC Circuit 5.

[17] MR. LEVY: So you'd use all of them.

[18] WITNESS KENNEDY: Yes, you would use [19] all of them, that's correct.

[20] MR. LEVY: Thank you.

[21] Q: If this were used in a virtual- [22] collocation arrangement, you'd need to find [23] physical space to locate, in my hypothetical of a [24] CLEC wanting to have a capacity to serve 14,000 end

Page 134

[1] users — you'd have to find space somewhere in the [2] central office to position ten of these.

[3] A: [KENNEDY] That's correct.

[4] Q: Are these mounted on some kind of [5] freestanding frame?

[6] A: [KENNEDY] Industry-standard 23-inch [7] relay-equipment rack, which is common to the [8] telephone-office equipment.

[9] Q: Do they need some clearance around them [10] on the sides, above them —

[11] A: [KENNEDY] That particular robot is 15 [12] inches front to back.

[13] Q: Clearance requirement.

[14] A: [KENNEDY] Right.

[15] Q: For either of the Bell Atlantic [16] witnesses: Bell Atlantic's virtual-collocation [17] offering, as I understand it, requires a CLEC to [18] purchase some piece of equipment located in a [19] location in a Bell Atlantic central office and to [20] transfer title for a nominal price to Bell [21] Atlantic, so that ownership of the equipment ends [22] up being in Bell Atlantic. Is that Bell Atlantic's [23] intention with respect to this equipment in a [24] virtual-collocation arrangement?

Page 135

[1] A: [ALBERT] That's correct.

[2] Q: What is the nominal price, typically?

[3] A: [ALBERT] A dollar, American money.

[4] Q: When Bell Atlantic in its position [5] statement says that the virtual-collocation [6] arrangement does not require a CLEC to own any [7] network equipment, the key to that statement being [8] true is that the Bell Atlantic virtual-collocation [9] arrangement requires the transfer of title of any [10] CLEC equipment to Bell Atlantic. Is that correct?

[11] A: [ALBERT] Right. That's the way the [12] virtual-collocation offering works. It gets [13] installed in our normal lineup of transmission [14] equipment, and we maintain it —

[15] Q: If Bell Atlantic imposed the same

[16] requirement for physical collocation, you'd have [17] the same outcome — that is, if you required CLECs [18] to transfer title of any physical collocation [19] equipment, then you could also say that the CLEC in [20] that scenario doesn't own any network equipment.

[21] A: [ALBERT] That's a hypothetical "if" that [22] we wouldn't do. I mean, with physical, the CLEC [23] owns it.

[24] Q: In the virtual-collocation arrangement,

Page 136

[1] the CLEC has to buy it; correct?

[2] A: [ALBERT] Right, with virtual the CLEC [3] gets to pick the equipment, pick the technology, as [4] long as it's NEBS-compliant. Then we'll go ahead [5] and install it in the regular central-office lineup [6] and go through the process we were just talking [7] about.

[8] Q: And once it's installed, only Bell [9] Atlantic technicians are permitted to lay hands on [10] it, as a general rule, as opposed to CLEC [11] technicians.

[12] A: [ALBERT] That's correct, because it's in [13] Bell Atlantic's part of the central office where [14] Bell Atlantic employees are. It's right within our [15] normal lineup of transmission equipment. So if [16] there's trouble with it, the CLEC calls and says, [17] "Do this, do that, change a circuit pack." For [18] other types of transmission equipment that we [19] collocate virtually, that's the way we work and [20] operate those.

[21] MR. LEVY: But you would let [22] Mr. Kennedy's company come in and maintain it?

[23] WITNESS ALBERT: I don't know. I [24] hadn't thought about that. The virtual

Page 137

[1] arrangements we've got in place today, all the ones [2] we've got, Bell Atlantic takes care of them. In [3] terms of somebody else? I don't know.

[4] Q: Who installs it?

[5] A: [ALBERT] None of these are virtually [6] collocated yet. I can describe what we do for [7] other virtually collocated equipment. There either [8] Bell Atlantic will install it, or if it's an [9] approved vendor, then the CLEC can hire their pick [10] of approved vendors to install them.

[11] Q: And that's Bell Atlantic-approved [12] vendors.

[13] A: [ALBERT] That's correct, for working in [14] a central-office environment.

[15] Q: And isn't it true, Mr. Albert, that Bell [16] Atlantic when it purchases central-office equipment [17] from third-party vendors, that more often than not

[18] it is the employees of the third-party vendor [19] rather than Bell Atlantic employees who actually [20] install central-office equipment?

[21] A: [ALBERT] There's a big difference. When [22] I'm describing virtual collocation that's been done [23] in other Bell Atlantic states.

[24] Q: I'm expanding my —

Page 138

[1] A: [ALBERT] When we get to Massachusetts, [2] things are different. In New England and in [3] Massachusetts, all of the installation of telephone [4] equipment, all of the cross-connections, all of the [5] work within the central offices are done by Bell [6] Atlantic employees. So in that particular regard, [7] things are different.

[8] Q: So if Bell Atlantic in Massachusetts [9] purchases a major piece of central-office equipment [10] from Lucent, Bell Atlantic, rather than Lucent, [11] employees will install that equipment?

[12] A: [ALBERT] That's correct.

[13] Q: In Bell Atlantic South, that's not [14] necessarily correct; isn't that true?

[15] A: [ALBERT] We don't have full-time [16] employees on Bell Atlantic's payroll that typically [17] install central-office equipment. We'll use the [18] vendor, such as NorTel and Lucent and others, for [19] the installation of the equipment itself.

[20] Q: Right. So at least in Bell Atlantic [21] South, for at least approved vendors, Bell Atlantic [22] has overcome any security concerns about having [23] non-Bell Atlantic employees working in Bell [24] Atlantic's central offices on Bell Atlantic

Page 139

[1] equipment. Isn't that a fair statement?

[2] A: [ALBERT] Not when you answer it in such [3] broad, sweeping terms. The hardware itself will [4] have the actual equipment manufacturers that make [5] it, like it's a switch, install it. If we're [6] talking about running connections to the frames, if [7] we're talking about running connections on [8] distributing frames, even in the South, all that [9] work is done by Bell Atlantic employees.

[10] So you can't generalize across the [11] universe of all the activities of equipment [12] installation that happen in the central office. [13] For things like switches and major pieces of [14] transmission equipment in the South, vendors will [15] do that. But when you get into the actual work on [16] the distributing frames, the actual running of the [17] connections, the actual connections for working [18] services —

[19] Typically, if you want a [20] generalization, if it's a working service, it's [21]

Bell Atlantic employees and Bell Atlantic hands [22] that are involved in the work on it, even in the [23] South.

[24] Q: But there are circumstances in which

Page 140

[1] Lucent or NorTel employees are doing work on Bell [2] Atlantic central-office equipment?

[3] A: [ALBERT] If we were to buy a new digital [4] switch that we were going to install to replace an [5] existing analog 1AESS, that would be an example of [6] a case where we would use the equipment [7] manufacturer's employees to install the equipment.

[8] Q: And at this time, with respect to this [9] particular equipment from CON-X, you don't know [10] what Bell Atlantic's policy would be with respect [11] to who would actually do the installation work for [12] any such equipment purchased by CLECs for [13] installation in a Bell Atlantic central office?

[14] A: [ALBERT] I'd say for Massachusetts [15] initially it would be Bell Atlantic employees. [16] Other alternatives we'd have to think about, [17] consider.

[18] Q: What about maintenance?

[19] A: [ALBERT] Bell Atlantic employees, under [20] the direction of the CLEC. There's a big [21] difference in that regard. We don't go up and [22] routinely change the plugs, dust the equipment [23] off. It's up to the CLEC to say, "Go to this [24] shelf, pull this card, do this specific work for

Page 141

[1] me." So when we're talking about the maintenance [2] for virtually collocated equipment, it's really the [3] CLEC that monitors it, it's the CLEC that tests it, [4] it's the CLEC that directs the hands of our [5] employees to go up and touch it and do things.

[6] Q: The original purpose of virtual [7] collocation, as I understand it, Mr. Albert, was [8] for providing collocation in central offices where [9] there might not be sufficient physical space to [10] permit physical collocation. Is that accurate?

[11] A: [ALBERT] That was the main purpose for [12] it, that I'm aware of. It was an alternative to [13] physical.

[14] Q: Do you know whether installing — again, [15] let me choose, for simplicity's sake, ten of the [16] M400-1400 devices — do you know how much physical [17] space in a Bell Atlantic central office that would [18] take? That's either Mr. Kennedy or Mr. Albert.

[19] A: [ALBERT] I'd defer to Mr. Kennedy on the [20] number of those that you can get into a seven-foot [21] frame.

[22] A: [KENNEDY] You can get two in a seven- [23] foot frame.

[24] Q: Seven feet is a vertical frame at

Page 142

[1] measurement; correct?

[2] A: [KENNEDY] That is correct.

[3] Q: So if you needed ten, you'd need five [4] frames.

[5] A: [KENNEDY] That's correct.

[6] A: [ALBERT] Right.

[7] Q: How many of those could you get into a [8] 25-square-foot mini-collocation space?

[9] A: [KENNEDY] I'd have to lay it out. I'd [10] say a couple of seven-foot frames. I might be off [11] by one.

[12] Q: If you got a couple in there, could you [13] get a human being in there with them?

[14] A: [ALBERT] I'd have to lay it out. I [15] think you could get a couple with a human being. [16] If you're talking about two fully-laid-out seven- [17] foot frames, each of those containing two of those [18] in a module, two in a cage.

[19] Q: We might get Ms. Brown, but not you or [20] me, in there.

[21] A: [BROWN] Don't count on me. I have no [22] idea.

[23] Q: Strike the question.

[24] A: [ALBERT] The application we're talking

Page 143

[1] about for these would not, I don't think, primarily [2] be for physical, although a CLEC could use it for [3] that. The application would be for virtual. In [4] that situation, we're not putting them in cages, [5] we're putting them in the normal transmission- [6] equipment portion of the Bell Atlantic central [7] office.

[8] Q: Mr. Kennedy, you said earlier that a [9] couple of independent phone companies have [10] purchased and installed pieces of this equipment [11] and one RBOC. Is the one RBOC you're referring to [12] Bell Atlantic?

[13] A: [KENNEDY] Yes.

[14] Q: So Bell Atlantic is the only RBOC that [15] has purchased and installed any of this?

[16] A: [KENNEDY] Currently, to date, yes.

[17] MR. JONES: Could I have a minute? [18] I'm focusing on getting Mr. Kennedy out of here.

[19] (Pause.)

[20] MR. JONES: I don't have any further [21] questions for Mr. Kennedy.

[22] MR. LEVY: Ms. Barbusescu or Ms. [23] Thurston, do you have any for Mr. Kennedy?

[24] **MS. BARBULESCU:** I have a couple for

Page 144

[1] Mr. Kennedy.

[2] **CROSS-EXAMINATION**

[3] **BY MS. BARBULESCU:**

[4] **Q:** Mr. Kennedy, I have a couple of [5] questions. You said this equipment is currently in [6] service. Is it in service for the specific purpose [7] that we want to use it here today, for remotely [8] accessing and combining unbundled network [9] elements?

[10] **A:** [KENNEDY] The in-service use of it today [11] is connecting a switch port to a cable pair in a [12] remote central office that is remotely accessed. [13] So yes. But when you use the terms UNE, link to [14] port, for a CLEC's purpose, the answer to that is [15] no at this time. It's used by telephone operating [16] companies.

[17] **Q:** Thank you. You said that equipment will [18] be able to combine loop and port. What about [19] remotely combining loop and transport?

[20] **A:** [KENNEDY] If it falls within the [21] electrical characteristics of the circuit, it will [22] certainly combine those.

[23] **Q:** That's all the questions I have. Thank [24] you.

Page 145

[1] **MR. LEVY:** Ms. Thurston?

[2] **MS. THURSTON:** No.

[3] **MR. LEVY:** Mr. Beausejour, any [4] re-direct for Mr. Kennedy?

[5] **MR. BEAUSEJOUR:** I have none.

[6] **MR. LEVY:** Let's go off the record.

[7] (Discussion off the record.)

[8] **MR. LEVY:** Back on the record. [9] PAULA L. BROWN and [10] DON ALBERT, Previously Sworn [11] **MR. LEVY:** Mr. Albert, I just had a [12] question. When we were talking before about the [13] company policy of having only Bell Atlantic [14] employees touch equipment in the central office, [15] does that derive in part from an agreement with the [16] Bell Atlantic unions?

[17] **WITNESS ALBERT:** I don't know.

[18] **WITNESS BROWN:** I don't know. I know [19] it certainly is customary in these states, but I [20] don't know —

[21] **WITNESS ALBERT:** The custom and the [22] practice. I don't know if....

[23] **MS. EVANS:** Can management perform [24] any of the work?

Page 146

[1] **WITNESS BROWN:** I would say probably [2] not, without knowing our contract per se. [3] Management typically does not perform any craft [4] work.

[5] **WITNESS ALBERT:** It has to be during [6] a work stoppage.

[7] **WITNESS BROWN:** There are times, but [8] hopefully we don't encounter those.

[9] **MR. LEVY:** We also want to [10] distinguish between the words "can management" and [11] "may management."

[12] **WITNESS BROWN:** I think "may" is the [13] operative word here. I don't think we want to use [14] the word "can."

[15] **CROSS-EXAMINATION**

[16] **BY MR. JONES:**

[17] **Q:** Mr. Albert, on Page 5 of the Bell [18] Atlantic position statement, in the middle of the [19] second paragraph of that page appears the following [20] sentence. Quote, "Through this arrangement a CLEC [21] is not required to establish any physical presence [22] in a Bell Atlantic - Massachusetts central office [23] and need own no facilities of its own to access [24] UNEs." You'll see this is referring to offering

Page 147

[1] virtual collocation in every central office. Do [2] you understand the context of that statement?

[3] **A:** [ALBERT] Yes.

[4] **Q:** I just want to be sure we're clear on the [5] record: The CLEC may not be required to establish [6] a physical presence; but again, that's only because [7] under the Bell Atlantic approach it purchases what [8] would otherwise be a physical presence and sells it [9] to Bell Atlantic. Is that correct?

[10] **A:** [ALBERT] This is virtual collocation I [11] described, where the CLEC picks the equipment, [12] selects it, sells it to us for a dollar. We then [13] maintain it under the direction of them, but we've [14] got title to the equipment.

[15] **Q:** So would you agree that it might be more [16] accurate to say that a CLEC is required to purchase [17] and provide to Bell Atlantic for establishing a [18] physical presence equipment that enables the [19] provision of virtual collocation services?

[20] **A:** [ALBERT] Yes, that's how we do virtual [21] collocation.

[22] **Q:** Do you have any idea how Bell Atlantic [23] accounts for equipment that it acquires for a [24] dollar?

Page 148

[1] **A:** [ALBERT] No, I have no idea how the [2] accounting works.

[3] **Q:** You don't know whether that's carried on [4] its books as a rate-base item for a buck or for, in [5] this case, \$20,000?

[6] **A:** [ALBERT] Well, it wouldn't be for [7] 20,000. I don't know where on the

books —

[8] **Q:** What are the other options besides one [9] dollar or \$20,000?

[10] **A:** [ALBERT] It would be one. I don't know [11] where on the books it appears. I don't know if it [12] appears as capital or if it appears as expense. [13] But it would be carried on the books at whatever [14] price we paid for it.

[15] **Q:** Let's jump ahead.

[16] **MR. LEVY:** May I just ask on that [17] one: If for some reason the CLEC wanted to remove [18] it and stop virtual collocation there, does it have [19] the right to get it back?

[20] **WITNESS ALBERT:** We'd sell it back to [21] them for 100,000. No, we'd sell it back to them [22] for a dollar.

[23] **MR. LEVY:** But they do have that [24] option.

Page 149

[1] **WITNESS ALBERT:** Yes. We would [2] reverse the virtual-collocation process. We [3] haven't had anybody do that yet, but we will [4] someday, I'm sure.

[5] **Q:** Mr. Albert, the switch subplatform refers [6] entirely to UNEs that are on the trunk side of the [7] switch; is that correct? And beyond, out into the [8] network.

[9] **A:** [ALBERT] What page was that on, again?

[10] **Q:** I'm beginning on Page 9.

[11] **A:** [ALBERT] Let me read the description. [12] (Pause.) Really, I think the stuff we're combining [13] together is from the port on, because this is [14] all —

[15] **Q:** From the trunk-port side of the switch —

[16] **A:** [ALBERT] I'd say from the line port. [17] You start with the line port, and you get [18] everything from there through the trunk side and [19] then also to the peripheral systems that it all [20] connects to.

[21] **Q:** So by starting from the line port, you're [22] connecting including all of the switch [23] functionality ^^^sic in the switch-subplatform [24] offering.

Page 150

[1] **A:** [ALBERT] Yes.

[2] **MR. LEVY:** That sounds wrong, [3] compared to your description here.

[4] **WITNESS ALBERT:** I thought it had the [5] switch port in it. I'm not the product person.

[6] **A:** [BROWN] I think this question was [7] probably best addressed to Amy. I thought you [8] had.

[9] **Q:** I thought I understood it, but maybe I [10] don't.

[11] **MR. LEVY:** I think the way she [12]

described it was the trunk side and the features [13] external to the switch on the trunk side.

[14] A: [ALBERT] That's product definition.

[15] MR. JONES: I would make a record [16] request that we learn whether the switch [17] subplatform includes all switch functionalities, [18] all functionalities of the switch UNE. If the [19] answer to that is other than yes or no [20] definitively, then could we have a description of [21] what it does and doesn't include.

[22] MR. LEVY: Fine. That will be Record [23] Request Combinations 9.

[24] (RECORD REQUEST.)

Page 151

[1] Q: To the extent the switch subplatform, [2] Mr. Albert, includes elements that are out in the [3] network, let's say from the trunk port out — [4] shared transport, dedicated transport, access to [5] operator services and to emergency services and [6] signaling and the like — does Bell Atlantic in [7] Massachusetts currently face any competition in the [8] market today for those service offerings?

[9] A: [ALBERT] I don't know. Is that your [10] question: Do we face competition for those?

[11] Q: Are those competitors that are offering [12] dedicated transport in Massachusetts?

[13] A: [ALBERT] You mean like a competitive [14] access provider?

[15] Q: I'm not limiting my question. If you [16] want to name categories, that's fine. But my [17] question is as broad as I stated it.

[18] A: [BROWN] There is within the industry [19] competition for transport. Sitting here today, I [20] can't give you a list of who might be competing for [21] that in Massachusetts. But if you want, I'm sure [22] we can provide, to the best of our knowledge, who [23] might be competing for that.

[24] A: [ALBERT] I mean, competitive access

Page 152

[1] providers for access services and for transport [2] have been around for a number of years now, the [3] '90s. Do you need a list of the ones in [4] Massachusetts?

[5] Q: No. Would it be accurate to say that [6] Bell Atlantic currently faces more competition in [7] the market for the service offerings that are [8] encompassed in the switch-subplatform offering than [9] it does for end-user loops?

[10] A: [ALBERT] I don't know. I connect the [11] wires together and do the cut-

overs; but when you [12] get to where do we have competitors and how much [13] and who and relative to each other, you're out of [14] my league.

[15] A: [BROWN] I would add to that: I have no [16] comparative data for the competition in the two [17] markets. I don't know of any data specifically [18] that addresses that.

[19] Q: Would it be accurate to say that in this [20] position statement Bell Atlantic is voluntarily [21] offering UNE combinations on the more competitive [22] side of its network and declining to offer UNE [23] combinations on the less competitive piece of its [24] network?

Page 153

[1] A: [BROWN] I'm not aware of any information [2] that drove the decision one way or the other.

[3] Q: So we have it in one place: Mr. Albert, [4] the switch subplatform is of no use whatsoever to a [5] CLEC in combining loops and switch elements; is [6] that correct?

[7] A: [ALBERT] I think the definition in the [8] document, it does not include the loop and the port [9] being put together. It includes what it describes [10] in here, but that does not include the loop.

[11] Q: Is it accurate, Mr. Albert, that the [12] switch-subplatform offering is of no use whatsoever [13] to a CLEC in combining the loop and the switch [14] elements?

[15] A: [ALBERT] I'm not sure if I'm really [16] following your question. I mean, what a CLEC would [17] do, they could buy the subplatform, and then they [18] would do the combining themselves, to connect the [19] loop up to it. From that point on they're off and [20] flying.

[21] Q: Does the switch subplatform in any way [22] facilitate for a CLEC the combining of a loop [23] element and the switch element?

[24] A: [ALBERT] I don't think it's involved

Page 154

[1] with combining loops. I mean, the CLEC would [2] combine the loop to it; but when you're just [3] talking about it unto itself, there's no loop [4] there.

[5] Q: Does the enhanced extended-loop service [6] in any way enhance the ability of a CLEC to combine [7] a loop and a switch element?

[8] A: [ALBERT] Loop and switch element from [9] Bell Atlantic?

[10] Q: Yes.

[11] A: [ALBERT] No, the extended link is to [12] combine loop and transport from Bell Atlantic, [13] which would then get hooked up to CLEC-provided — [14] get

hooked up to switching provided by the CLEC.

[15] Q: In a downtown-Boston central office of [16] Bell Atlantic, does either of you know in any of [17] the central offices in downtown Boston what the [18] current serving capacity by end-user lines is?

[19] A: [BROWN] No.

[20] A: [ALBERT] Hmm. It's going to vary from [21] one CO to the next.

[22] Q: I don't know whether the "hmm" was a [23] negative "hmm" or a positive "hmm"?

[24] A: [ALBERT] It was a "hmm" in that the

Page 155

[1] capacity was going to vary by central office.

[2] Q: I understand. And I'm asking for any of [3] the downtown-Boston central offices do you know [4] what that capacity is?

[5] A: [ALBERT] No.

[6] Q: Would it be safe to say it's in the [7] hundreds of thousands?

[8] A: [ALBERT] You'll get the very biggest [9] kahunas up around 100,000. That's very big size. [10] Something more average, 50,000, 6,000.

[11] Q: If a CLEC wished to compete for all of [12] the end users served by a downtown Bell Atlantic [13] central office, using virtual collocation as [14] outlined in this proposal, how many M400-1400 units [15] would it need?

[16] A: [ALBERT] If you're, hypothetically, say, [17] taking 100,000 access lines, I guess the math would [18] be to divide that by 1,400.

[19] Q: And how much space would you need to put [20] that many of those units in place?

[21] A: [ALBERT] Well, if you get two of those [22] units and a 23-inch-wide, seven-foot-tall frame, [23] then you would need 50 frames that were 23 inches [24] wide and seven-foot tall.

Page 156

[1] Q: Could you fit that many frames into a [2] 100-square-foot collocation cage?

[3] A: [ALBERT] If you compacted them, you [4] could. It would be a big hunk of metal.

[5] (Laughter.)

[6] A: [ALBERT] But under normal design, no, [7] that would not fit in a 100-square-foot cage. That [8] would be clearly ten pounds in a five-pound bag.

[9] Q: The installation of these units would [10] require that they be wired from the Bell Atlantic [11] main distribution frame on a circuit-by-circuit [12] basis to the M400-1400 and then wired

back again to [13] the Bell Atlantic main distribution frame; isn't [14] that correct? You'd have to have cross-connects [15] coming from the frame to the unit and from the unit [16] back to the frame?

[17] A: [ALBERT] I wouldn't describe them as [18] cross-connects. I wouldn't say they are one at a [19] time. It's tie cables, which are 100-pair, [20] smallest minimum size. We would tie-cable from the [21] distributing frame over for the loops, and then [22] we'd also tie-cable from the distributing frame [23] over for the switchboards. So those tie cables [24] would run off of our Bell Atlantic main-frames, and

Page 157

[1] they would be terminated onto the piece of [2] equipment.

[3] Q: And at the point of termination, you'd [4] have to do that line by line?

[5] A: [ALBERT] Right.

[6] Q: The cable just is a whole bunch of lines, [7] but when you get to the place where you've got to [8] hook them up, you've got to hook them up line by [9] line; right?

[10] A: [ALBERT] The connections would be made a [11] line at a time. The cables themselves, you're [12] running them usually in groups of 100.

[13] Q: So the CLEC would be dependent on Bell [14] Atlantic making, if we're back to our 100,000 [15] circuits, tying in 100,000 connections to however [16] many of these units we've got and then tying them [17] back to the main distribution frame; correct?

[18] A: [ALBERT] For the CON-X equipment, we're [19] talking about?

[20] Q: Yes — virtual collocation as proposed by [21] Bell Atlantic in this position statement.

[22] A: [ALBERT] We would install the tie cables [23] to the virtually collocated equipment at the time [24] the virtually collocated equipment was installed.

Page 158

[1] Q: What would you expect the failure rate, [2] in the sense of either improperly completed [3] connections or improperly — inaccurately placed [4] connections to be where you are making 100,000 [5] connections in and 100,000 connections back to the [6] MDF?

[7] A: [ALBERT] I'd say the end product of the [8] job would be very low. I mean, when we install [9] equipment in the central office, we test it out [10] when we're done.

[11] Q: You would expect there to be some failure [12] rate, would you not?

[13] A: [ALBERT] Some as in something more than [14] zero?

[15] Q: Yes.

[16] A: [ALBERT] There probably would be [17] something more than zero.

[18] Q: At the end of this process, let's assume [19] we're talking about an entire universe of [20] customers, existing customers, of Bell Atlantic who [21] are currently served by Bell Atlantic, and 100,000 [22] customers have decided to switch to the CLEC, and [23] you're providing it through one of these CON-X [24] units, and none of the customers has changed its,

Page 159

[1] his, or her service in any way other than to buy it [2] from the CLEC rather than from Bell Atlantic. Has [3] there been any increase of any sort in the network [4] functionality provided to those customers by virtue [5] of the connections to and from the CON-X [6] equipment?

[7] A: [ALBERT] I guess the example you're [8] talking about is so hypothetical, it's a little [9] hard for me to address. If we were to lose 100,000 [10] network access lines in a central office of ours [11] where we had 100,000 customers, we would probably [12] sell the central office, would be the way we would [13] do it.

[14] Q: Let's talk about one customer, this is [15] Mr. Salinger, being served through the Harrison [16] Avenue central office by Bell Atlantic. He buys [17] service from AT&T. AT&T says, "All right, we're [18] going to use the virtual-collocation option." We [19] buy a CON-X unit from CON-X, sell it to Bell [20] Atlantic for a buck. You install it. The cross- [21] connections back and forth to the main distribution [22] frame are completed, and AT&T is now serving Mr. [23] Salinger through the CON-X equipment. Has the [24] network functionality, the functionality that

Page 160

[1] provides service to him, been enhanced in any way [2] by the addition of the CON-X equipment to the [3] network configuration?

[4] A: [ALBERT] I'll probably sound a little [5] bit like the CON-X salesman at this point, but I'd [6] say yes. What the CON-X equipment does is, if you [7] accept that a typical migration path is for CLECs [8] over time to change out unbundled network elements [9] that they buy from Bell Atlantic and replace them [10] with their own facilities, if you've got a CLEC [11] customer served through a combination that runs [12] through the virtually collocated CON-X equipment, [13] and then at some point if that CLEC wants to [14] transfer the serving arrangement for that customer [15] over to an unbundled loop that

would be connected [16] to the CLEC switch, that transfer is now easier, [17] simpler, faster, cheaper to do, that evolution, [18] that migration, as a result of having it go through [19] the CON-X equipment. The three-pins arrangement [20] that Mr. Kennedy was describing, where there were [21] the ILEC inputs, the loop inputs, and the CLEC [22] inputs, that's specifically built and developed to [23] allow that type of a transition and that type of a [24] cutover to occur.

Page 161

[1] Q: Let's go back to my question, though, [2] Mr. Albert, which is that Mr. Salinger is now being [3] provided the same service by AT&T that he was the [4] day before being provided by Bell Atlantic. Aside [5] from what may happen somewhere down the road in the [6] future, has the network functionality by which he [7] is provided that service improved in any way by [8] virtue of the addition of the CON-X equipment?

[9] A: [ALBERT] I'd say the functionality that [10] the end user is getting has not improved. The [11] functionality of what the CLEC is getting has [12] improved.

[13] Q: For the reason you previously stated.

[14] A: [ALBERT] Yes.

[15] Q: And if the CLEC has no plans or does not [16] convert to its own switching capability, then there [17] is no network-functionality enhancement to the [18] CLEC, either; isn't that true?

[19] A: [ALBERT] I can't think of any others.

[20] Q: Just to go quickly through some of the [21] other alternatives here: Minicages: These are 25 [22] square feet. In the position statement it's stated [23] that they can accommodate up to 10,000 analog [24] lines. Is that correct?

Page 162

[1] A: [ALBERT] That's correct. That would be [2] not the type of CON-X equipment that we were [3] looking at; it would be your basic blocks that are [4] used for making cross-connections in central [5] offices. There's a block called a Krone block, [6] which is pretty standard that we use, and the [7] densities of them, when you would put those [8] together, you could accommodate those quantities of [9] lines.

[10] Q: What would a minicage accommodate for a [11] CLEC providing digital lines?

[12] A: [ALBERT] If those digital lines are [13] on — being transmitted on copper cable pairs, it [14] would be the same quantity of copper cable pairs. [15] That capacity really refers to the number of wires [16] that you would be able to install

and make [17] connections back and forth between, really [18] independent of the type of service that would be [19] riding on the wires. It could be an analog [20] service. It could be an ISDN BRI service.

[21] Q: I'm not going to go back through the [22] drill we went through in December in some detail. [23] But are you familiar, Mr. Albert, with the TELRIC [24] network modeled by Bell Atlantic for purposes of

Page 163

[1] its recurring-cost-study submissions in [2] Massachusetts; that is, how that network is [3] configured, what equipment?

[4] A: [ALBERT] No, not in Massachusetts.

[5] Q: The subletting proposal, if I understand [6] it correctly, that is another version of physical [7] collocation. It just permits the CLEC that rents a [8] collocation cage from Bell Atlantic to sublet space [9] in its cage to another CLEC; correct?

[10] A: [ALBERT] That's correct.

[11] Q: And both CLECs would be then physically [12] collocating in that cage.

[13] A: [ALBERT] That's correct.

[14] Q: And the assembly room is virtually [15] identical to the subletting scenario, except that [16] rather than one CLEC subletting to another, Bell [17] Atlantic simply permits multiple CLECs to occupy a [18] larger collocation space?

[19] A: [ALBERT] I wouldn't go quite as far as [20] saying virtually identical. I mean, the cabling [21] arrangements are going to be a little bit [22] different. In the assembly room the CLEC has got [23] the option of installing the cross-connect [24] equipment or having Bell Atlantic own and provide

Page 164

[1] that cross-connect equipment that they would use. [2] So there are a couple of different options there. [3] I think those are described in our proposal.

[4] What we would do with the assembly [5] room, though, is, we would have some standards that [6] we would develop, that basically we would have the [7] CLECs follow as far as the engineering and the [8] cabling arrangements and the setup of the equipment [9] in the room. Again this Krone block, which is what [10] we typically use in the central office for a lot of [11] our connections, it's battleship, highly reliable. [12] The cabling arrangements to that in groups of 100, [13] we would have some standardization there for the [14] setup of the assembly room.

[15] So that basically we'd have a neat, [16] orderly, maintainable administrative arrangements [17] for everybody to use.

[18] Q: And everybody would be using it for [19] physical collocation. That's what the assembly [20] room provides; correct? Just in a different kind [21] of space and a different economic arrangement for [22] that space; correct?

[23] A: [ALBERT] No, I don't think so. I [24] wouldn't quite call it physical collocation. I

Page 165

[1] mean, the CLEC can own the blocks in there that [2] they use to do the combining, or they can have Bell [3] Atlantic install them and we would own them, and [4] then they would pay for the use of those for them [5] to do the combining. So I don't know if I would [6] really equate that to collocation. But you've got [7] options where they can own it or we can own it.

[8] Q: In terms of how the cross-connections [9] from the main distribution frame to the collocated [10] facilities, whoever owns the collocated facilities, [11] and back to the main distribution frame — in that [12] respect the assembly-room arrangement would be the [13] same as what you've previously offered and [14] described as physical collocation; correct?

[15] A: [ALBERT] Yes, the tie-cabling [16] arrangements that would take the unbundled loops [17] from Bell Atlantic's main distributing frame and [18] would take the switch ports from Bell Atlantic's [19] main distributing frame, the running of those tie [20] cables to the assembly room would be analogous to [21] the running of tie cables to a physical collocation [22] cage.

[23] Q: Mr. Albert, is there any scenario in the [24] various alternatives that are set forth in Bell

Page 166

[1] Atlantic's position statement which would permit a [2] CLEC to sign up an existing Bell Atlantic customer [3] and complete the ordering and provisioning of [4] service to that customer, the transfer of its [5] existing Bell Atlantic service to the CLEC, using [6] UNEs on a completely electronic flow-through basis [7] beyond the manual service-order-entry process?

[8] A: [ALBERT] No, and even if we were doing [9] the combining ourselves in the pre-Eighth Circuit [10] mode, you wouldn't have that either. I mean, the [11] translations work; that has to be done. The [12] instructions in the switch that tell that line how [13] to function, that is not and will not be [14] automated. So the translations work to take that [15] line as a Bell Atlantic - Massachusetts end user [16] and to retranslate it and set it up as an [17] unbundled-switch port, unbundled-

switch line, [18] changing the class of service, changing the [19] line-class codes, changing the advanced intelligent [20] network triggers that we set on the line — all [21] that work will always have to be done for every [22] unbundled switch port, independent of who combines [23] it together.

[24] Q: Let me make my hypothetical a little

Page 167

[1] clearer. I'm taking an existing Bell Atlantic [2] end-use customer — let's make him or her a [3] residential customer — and has residential service [4] from Bell Atlantic, with facilities in place all [5] the way to the central office serving that [6] customer. And let's assume that customer moves out [7] of the home. My understanding — and it's been [8] testified to by your predecessors for Bell Atlantic [9] on the stand here — is that Bell Atlantic in that [10] scenario simply leaves in place the physical [11] network facilities that have served that customer. [12] Is that your understanding of the general practice [13] of Bell Atlantic?

[14] A: [ALBERT] General practice? I wouldn't [15] generalize on it. I mean, we attempt to do that.

[16] Q: Let's assume in my hypothetical you've [17] done them.

[18] A: [ALBERT] Okay.

[19] Q: And a new customer moves into that [20] residence three days later and signs up for [21] identical service from Bell Atlantic; that is, [22] identical to what the prior customer was [23] purchasing. It has been testified to here by two [24] prior Bell Atlantic witnesses that Bell Atlantic

Page 168

[1] can provision service to that customer, other than [2] the manual process of taking the service order — [3] the operating support systems will electronically [4] on a flow-through basis complete all of the steps [5] necessary to reinstate service to that new [6] customer. That is your understanding?

[7] A: [ALBERT] If we would be talking about [8] reinstating Bell Atlantic service —

[9] Q: That's what we're talking about.

[10] A: [ALBERT] Yes. If we're talking about [11] changing that from Bell Atlantic service to [12] unbundled switching, no.

[13] Q: We're talking about changing Bell [14] Atlantic service, the first of your options. So [15] that's done electronically on a flow-through basis [16] by Bell Atlantic using its operating support [17] systems; correct?

[18] A: [ALBERT] Some of the times.

[19] Q: On one of the times when that would be [20] done electronically and on a flow-through basis for [21] Bell Atlantic, if the new customer purchased [22] service from a CLEC, identical service, and the [23] CLEC chose to provide that service through [24] unbundled network elements purchased from Bell

Page 169

[1] Atlantic, under the various scenarios proposed in [2] Bell Atlantic's position statement, there is no [3] circumstance in which the CLEC could provision that [4] service on an electronic flow-through basis; isn't [5] that correct?

[6] A: [ALBERT] That's correct. Bell Atlantic [7] would have translations work that we would have to [8] do to convert every one of those lines.

[9] Q: You discussed in your opening statement [10] several alternatives that CLECs had raised in [11] various forums in various ways, and you described [12] the deficiencies with each of those, one of which [13] was logical unbundling through the recent-change [14] process; correct?

[15] A: [ALBERT] That's correct.

[16] Q: And logical unbundling, that phrase is [17] intended to distinguish unbundling using software [18] from physical unbundling, where things are actually [19] taken apart out in the central office or out in the [20] field. Is that an accurate statement?

[21] A: [ALBERT] Well, I think the labeling, the [22] term that's been used for that I think is a [23] misnomer. You cannot use that capability of the [24] switch to unbundle anything. That capability does

Page 170

[1] not disconnect the loop from the switch port. What [2] this capability does is, it activates the switching [3] service. But it doesn't have anything to do with [4] the connecting of the loop to the switch. It [5] preassumes the loop is already connected to the [6] switch. Then what it really does is, it activates [7] the switching service. But it is not connecting [8] the loop to the switch.

[9] MR. LEVY: Could we back up on this [10] one? I don't understand what the concept is at [11] all, and it would help me to know what it actually [12] means.

[13] MR. JONES: Could I keep going? I am [14] going to press ahead. I don't know if it will [15] help. You'll tell me if it doesn't.

[16] WITNESS ALBERT: Would you like me to [17] take a shot at that?

[18] Q: Let me ask you a couple of questions, Mr. [19] Albert. We're talking about a functionality, as I [20] understand it, in the switch provided by the [21] recent-change memory administration — what's the

[22] last "C" in RCMAC?

[23] A: [ALBERT] "Center."

[24] Q: Would you describe the recent-change

Page 171

[1] functionality in Bell Atlantic's existing operating [2] support systems?

[3] A: [ALBERT] The recent-change functionality [4] is the method for defining instructions to the [5] switch of how a switched line will operate. You [6] specify the features that will be on that line. [7] Will it have call-waiting? Will it have three-way [8] calling? You specify [9] the type of calling privileges that it will have, [10] the calling area. You specify other dialing [11] instructions, different types of blocking — for [12] instance, for 900. You specify the class of [13] service: Is it a flat rate? Is it a measured? [14] You specify the type of recording that will be done [15] for billing purposes. You specify the PIC, the [16] interexchange carrier. All the different [17] switch-related features, functions, and parameters [18] associated with that line are established through [19] recent change, which is setting up the instructions [20] and the messages to define how that switched line [21] will work.

[22] Q: This is an operating support system which [23] performs those functions by software-driven [24] procedures; correct?

Page 172

[1] A: [ALBERT] By people. You know, it's [2] people talking through a terminal to the switching [3] machine. Now, the system itself, there are further [4] degrees of mechanization that are set up that are a [5] part of that process. There are checks that are [6] made and routines that are run to the instructions [7] that the human being inputs from the terminal.

[8] Q: The recent-change process determines [9] which switch functionalities are available on which [10] line. Is that an accurate statement?

[11] A: [ALBERT] Yes.

[12] Q: So when a switch port has a line [13] connected to it, the recent-change process dictates [14] which of the switch functions are available to, [15] accessible to that line?

[16] A: [ALBERT] It would take the loop that's [17] connected to the switch, and it would say here are [18] the features and the functions that will be placed [19] on that dial-tone service.

[20] Q: And the recent-change process permits [21] Bell Atlantic to essentially disable all switch [22] functionalities from a particular line?

[23] A: [ALBERT] To disable and change, yes.

[24] Q: And you can't using recent change

Page 173

[1] physically disconnect a line from a switch; [2] correct?

[3] A: [ALBERT] That's what I was getting at. [4] The recent change has nothing to do with [5] disconnecting the loop from the switch or with [6] connecting the loop to the switch. It's purely [7] establishing the features and the functions of the [8] switch that are already connected to that loop.

[9] Q: And if you thought of unbundling in terms [10] of not physically disconnecting a loop from a [11] switch but, rather, as disabling the switch [12] functionalities from that particular loop, in that [13] sense recent change can, if you accept my sense of [14] unbundling — in that sense recent change can [15] unbundle a switch functionality from a loop. [16] Correct?

[17] A: [ALBERT] I guess I would disagree and [18] not accept your definition of unbundling.

[19] Q: I know you would not, but for purposes of [20] my question, if you accept that — and I'm not [21] suggesting that you do. But if you accept that, [22] that's an accurate description, is it not?

[23] A: [ALBERT] Again, I don't think so. [24] because I don't think you were using that to

Page 174

[1] unbundle. To me, unbundling is separating the loop [2] from the switch. If you've still got the loop [3] connected to the switch, it's not unbundled.

[4] MR. LEVY: Just so I'm clear, this [5] RCMAC — what you're saying, Mr. Jones, and I guess [6] you would like to hear Mr. Albert say, is that that [7] functionality, that OSS can be used in essence to [8] disengage, as opposed to unbundle — disengage the [9] switch functionality from the loop functionality.

[10] WITNESS ALBERT: No, I would say it [11] does not disengage those two functionalities from [12] each other. It will change the switch [13] functionality. It will turn off the switch [14] functionality. But it doesn't disengage it from [15] the loop.

[16] MR. LEVY: Can it act so that there [17] is no switch functionality that is being used by [18] that loop; in other words, turn off the switch [19] relative to the loop?

[20] A: [ALBERT] Yes, it can turn the switch [21] off, yes.

[22] MR. LEVY: I was using the word [23] "disengage" in that way. I'm not saying physical [24] disengagement. I'm saying it can make it appear as

Page 175

[1] though there's no switch attached to that loop, in [2] terms of what the loop is able to accomplish.

[3] WITNESS ALBERT: Ask me that question [4] again?

[5] MR. LEVY: Is it smart enough to turn [6] off whatever electronics and CPU capacity exists in [7] the switch so that the loop basically can't [8] function as a loop?

[9] WITNESS ALBERT: I'd say the loop [10] still functions as a loop. It will shut dial tone [11] off.

[12] MR. LEVY: Then you just have a wire [13] in the ground; right?

[14] WITNESS ALBERT: It's still a loop.

[15] MR. JONES: A dead loop.

[16] MR. LEVY: It's physically attached [17] to the switch, and dial tone can be turned on [18] again. But if I'm understanding the point of Mr. [19] Jones's questions, it's that it's possible to use [20] that OSS to make the loop unfunctional carrying [21] information.

[22] WITNESS ALBERT: I don't know if I [23] would go as far as to describe it that way. I'd [24] say you would take the dial tone off it. You

Page 176

[1] haven't made the loop dysfunctional.

[2] MR. LEVY: I said "unfunctional."

[3] WITNESS ALBERT: You haven't made it [4] unfunctional. The loop is still capable of doing [5] what it does; it just doesn't have any dial tone [6] hanging on it.

[7] MR. LEVY: We could also attach a can [8] to each end of it.

[9] WITNESS ALBERT: That may be where [10] we're heading.

[11] (Laughter.)

[12] Q: What functionality does a loop have [13] without dial tone? What can a customer do with [14] it?

[15] A: [ALBERT] Transport. Nonswitch special [16] services is a perfect example. You can do lots of [17] things with a loop without dial tone.

[18] Q: Dedicated transport.

[19] A: [ALBERT] Yes.

[20] Q: What functionality does a standard, [21] residential-service loop have when a customer has [22] moved out — strike that.

[23] When a Bell Atlantic customer moves [24] out, a residential customer, whatever usual

Page 177

[1] configuration you have serving that customer, one [2] of the things that Bell Atlantic does now is to [3] leave left-in or

soft dial tone to that end-use [4] space; isn't that correct?

[5] A: [ALBERT] Sometimes.

[6] Q: And that is a recent-change function by [7] which that is done; is that correct?

[8] A: [ALBERT] When you turn the dial tone [9] off, you turn the dial tone off through a recent [10] change.

[11] Q: And you leave whatever capability it is [12] that permits you to provide left-in dial tone? [13] That's done through recent change as well?

[14] A: [ALBERT] What do you mean by — what's [15] your definition of "left-in dial tone"? Because [16] there are three or four different flavors of that [17] you can run into that people use.

[18] Q: Are some of those flavors achievable [19] through the recent-change process?

[20] A: [ALBERT] Where you leave all connections [21] in place and you remove the dial tone from all [22] those, that's achievable through a recent change.

[23] Q: Now, you said in your opening statement, [24] Mr. Albert, if I wrote fast enough and understood

Page 178

[1] well enough, that, first of all, Bell Atlantic does [2] permit Centrex customers to access the recent- [3] change software-driven functionality of the network [4] for certain purposes. Is that an accurate [5] statement?

[6] A: [ALBERT] The functionality of the [7] network? Yes. There's a system that will set out [8] in front of the RCMAC function that the Centrex [9] customers will work through to do things like [10] change speed calling, move call-waiting from one [11] line to another line, do rearrangements with [12] telephone numbers. There are a number of limited [13] activities that they can change for a specific [14] defined group of lines which they are able to [15] access.

[16] Q: And the thing that sits out in front of [17] the RCMAC is the so-called firewall?

[18] A: [ALBERT] It's more than a firewall. [19] It's the two different systems that I've described [20] that we've got in Massachusetts, one which is [21] called MACSTAR, and the other which is the acronym [22] CCRS, which is a Bellcore product. MACSTAR was [23] originally a Lucent product and is now handled by [24] another vendor. But that sits out and ties into

Page 179

[1] the recent-change capability and is used to provide [2] these Centrex types of changes.

[3] Q: And one of the purposes is to ensure that [4] a Centrex customer can access and fiddle around [5] only with that customer's own Centrex lines; [6] correct?

[7] A: [ALBERT] Once you have defined to it the [8] universe of lines that it can fiddle with, which is [9] much different than the capability that we're [10] talking about that would have to be developed for [11] using this to have any CLEC turn on and off any [12] line that was connected to the switch. That's [13] where you get into the security and the [14] partitioning and the large amount of development. [15] It's one thing to say, "Here's a predefined group [16] of lines, and only one person can go in and monkey [17] with them." It's something else to say, "Here's a [18] multiple number of people that can go in and monkey [19] with any line throughout the whole switching [20] machine." That's the two big differences we're [21] talking about between what would exist and what [22] would have to be.

[23] Q: What would it cost and how long would it [24] take to perform the development work necessary to

Page 180

[1] create that functionality that you just described?

[2] A: [ALBERT] I don't have any estimates on [3] it. We've had some preliminary discussions with [4] the vendors. We're talking more than a year, and [5] we're talking big bucks.

[6] Q: Bell Atlantic has over the last two years [7] plus performed a variety of different operating- [8] support-system modifications in anticipation of [9] providing service at wholesale rather than just [10] retail levels. Isn't that an accurate statement?

[11] A: [ALBERT] Yes, we've developed a number [12] of systems and interfaces and tied them together.

[13] Q: And Bell Atlantic has proposed for [14] recovery in this and other jurisdictions in excess [15] of \$100 million in operating-support-system [16] development costs in order to recover the costs it [17] claims it incurred in those OSS modifications; [18] correct?

[19] A: [ALBERT] I'm not the cost person and I'm [20] not sure what we've gone after recoverywise or [21] cost-proceeding-wise.

[22] Q: And what would be required to achieve the [23] recent-change functionality of the sort you just [24] described, which is lots of different carriers

Page 181

[1] being able to access all of the lines, would [2] require OSS modifications;

specifically, [3] modifications to and around the RCMAC system. [4] Correct?

[5] A: [ALBERT] Actually, it would be [6] modifications to a number of OSS's. You've got the [7] MACSTAR and the CCRS systems themselves. You've [8] got the RCMAC system that they've talked to. You [9] would also have systems for ordering and [10] provisioning and billing that they have to tie into [11] that would have to be developed. And then all [12] these things talk to two different switches, [13] switches that are made by Northern Telecom, [14] switches that are made by Lucent. You'd have [15] tie-ins and hooks into those that would have to be [16] worked as part of the overall development.

[17] So it's quite a number of systems [18] that would have to be modified.

[19] Q: And every one of those modifications [20] would be of the same sort, of the same type, as the [21] modifications to the OSS's that Bell Atlantic has [22] already performed and the cost of which it is now [23] attempting to recover in this 100-million-dollar [24] plus package of costs. We're talking specific

Page 182

[1] systems and specific modifications, but it's the [2] same kind of software changes and the like that [3] would be required. Isn't that correct?

[4] A: [ALBERT] No, I'd have no basis for [5] saying that. I'm not familiar enough with the [6] depths and the complexities of what's been done for [7] the other OS systems.

[8] Q: If those changes were made and if CLECs [9] could have access to the recent-change process, [10] CLECs could perform the disabling of the switch [11] functionality on a particular loop and the [12] reenabling of switch functionality on that [13] particular loop through the recent-change process, [14] could they not?

[15] A: [ALBERT] I mean it's possible through [16] all this development work that you'd have an [17] environment where multiple CLECs could turn dial [18] tone on and off through all these developed systems [19] to an end user.

[20] Q: And in those situations where you could [21] do that, there would be no necessity or requirement [22] or need for any physical activity in the central [23] office, either through collocation cages or at the [24] main distribution frame. It could be done through

Page 183

[1] the recent-change OSS, just as Bell Atlantic does [2] now. Correct?

[3] A: [ALBERT] For the number of cases where [4] we do that now, yes. I mean, I

think what's [5] important to bear in mind is, when you're doing [6] combinations, and if you look at the ones that [7] we've actually done in the pre-Eighth Circuit mode, [8] there are quite a few where not everything is there [9] and in place and you just reuse it. We have done [10] roughly 600 pre-Eighth Circuit combinations in the [11] South. We've done roughly a thousand in the [12] North. About 50 percent of the time they were new [13] lines, new orders, rearrangements, and 50 percent [14] of the time you didn't have the facilities there to [15] reuse.

[16] The arrangements that we then talked [17] about earlier, which is, yes, we try and reuse all [18] the connections in place — in offices where we try [19] to do that, if we can reuse them 40 percent of the [20] time, we're doing good. That's because for [21] businesses there are frequently so many changes [22] that happen that we aren't able to reuse them. [23] It's for the amount of equipment on the switching [24] machine; we can't leave it there idle long enough

Page 184

[1] to be able to use it for a reuse.

[2] So with combinations you get the [3] situation where first you even only have the [4] opportunity half of the time, from what we've [5] experienced, to reuse the stuff; and then of that, [6] only 40 percent of that half of the time do we [7] actually accomplish reusing connections.

[8] So the universe is much narrower than [9] thinking, boy, every single time you're going to be [10] able to reuse all these connections that are [11] already there.

[12] Q: I take it, Mr. Albert, the data you've [13] just recited is set forth in Bell Atlantic internal [14] reports of one sort or another?

[15] A: [ALBERT] No, that's in my head from my [16] experience.

[17] Q: I'm going to make a record request for [18] any documentation that Bell Atlantic has that can [19] provide support for any of the 40 percent, 50 [20] percent figures that you just provided to us.

[21] A: [ALBERT] Okay.

[22] MR. LEVY: We'll call that Record [23] Request Combinations 10.

[24] (RECORD REQUEST.)

Page 185

[1] Q: With respect to those occasions when the [2] equipment is in place and it is reusable, it's with [3] respect to those service-provisioning scenarios, [4] Bell Atlantic can provision service on a complete [5] electronic flow-through basis using the RCMAC and [6] other OSS's. Isn't that correct?

[7] A: [ALBERT] That's for ourselves?

[8] Q: Yes.

[9] A: [ALBERT] Some of the time. We always [10] get fallout. That's why I said, we are not [11] successful, even if they are in place, in reusing [12] them. We get fallout in the different systems. We [13] get fallout in the RCMAC systems, in the assignment [14] systems.

[15] Q: Are you familiar with the fallout rates [16] that Bell Atlantic has assumed for purposes of its [17] nonrecurring-cost study and OSS-cost study it [18] submitted in Massachusetts?

[19] A: [ALBERT] No.

[20] Q: Are you familiar with the experiential [21] basis on which those fallout rates are determined?

[22] A: [ALBERT] No, not for the cost studies.

[23] MR. LEVY: Let's take a break.

[24] (Recess taken.)

Page 186

[1] MR. LEVY: We have a couple of [2] questions from the Bench.

[3] EXAMINATION

[4] BY MS. EVANS:

[5] Q: I want to go back to ask a couple of [6] questions regarding how the CON-X works. When the [7] CON-X equipment is set up in a central office, are [8] all the subscriber lines prewired to the CON-X [9] equipment, so they all appear on the CON-X [10] equipment, and therefore no physical work needs to [11] be done, outside of what the CON-X equipment does, [12] to wire or change that subscriber from a Bell [13] Atlantic subscriber to a CLEC subscriber?

[14] A: [ALBERT] No physical work by the CLEC [15] will be required at that point. There would be the [16] tie cables that run from the Bell Atlantic main [17] distributing frame for loops and for ports, would [18] run to the CON-X equipment. Bell Atlantic would [19] then make the connections from the subscriber loops [20] and the subscriber switch ports to those tie [21] cables. And then the CLEC remotely, through the [22] computer terminal, would then specify which of the [23] tie-cable inputs and outputs to connect together.

[24] So the CLEC does not have to come to

Page 187

[1] the central office to do physical work for that. [2] Bell Atlantic technicians between the distributing [3] frame and the tie cables would have to do physical [4] work.

[5] Q: Therefore do I understand correctly that [6] the only subscribers that would show up on the [7] panel that would be wired to the panel would be [8] subscribers that are changing from Bell

Atlantic to [9] a CLEC?

[10] A: [ALBERT] That's right.

[11] Q: Not all the subscribers in the central [12] office.

[13] A: [ALBERT] That's right. What the tie [14] cables do is, that gives the ability for all of the [15] subscribers in the central office, if they need to, [16] to access that equipment. But the tie cables are a [17] much smaller subset of what would actually be used [18] to actually access it.

[19] Q: I have one further question, regarding [20] the assembly-room setup. Do I understand correctly [21] that the assembly room allows multiple CLECs to [22] work on a frame, in essence?

[23] A: [ALBERT] In essence, each CLEC would [24] have their own frame in that room, and they would

Page 188

[1] be able to combine and to work on circuits for [2] their customers, all contained in the same room.

[3] Now, I would recommend — and I don't [4] think we put it in the proposal. But I would [5] recommend the equipment that you buy, or can buy, [6] that would fit can come with locking covers, and [7] I'd recommend that most CLECs would want to put the [8] locking covers on and use them for security [9] purposes.

[10] But in essence, each CLEC all within [11] that same room is building their own frame that [12] only they work on. So you don't have five CLECs [13] all working on a common, single piece; they've all [14] got their own.

[15] Q: And for security purposes you would [16] suggest that these frames could be locked up in [17] some way?

[18] A: [ALBERT] Yes, there are covers that come [19] down over the front of the frames that can be [20] locked. And again, I don't think we put it in the [21] proposal, but I would recommend with the type of [22] equipment that would be deployed, that using those [23] would then allow the CLEC to lock up the front of [24] where the connections are made. I think that would

Page 189

[1] provide a better and more secure environment for [2] their services in this room that they can all [3] access.

[4] Q: Thank you.

[5] EXAMINATION

[6] BY MR. LEVY:

[7] Q: I have a further question on the [8] assembly-room concept. Referring to Page 15 of [9] your submission, Exhibit BA Combinations 2. In the [10] footnote it says, "Costs of the assembly room will [11] be less than current physical collocation

prices [12] because environmental conditioning, battery [13] support, cable vault space, and riser space will [14] not be required." Why would environmental [15] conditioning not be required in an assembly room, [16] as opposed to a regular collocation cage?

[17] A: [ALBERT] Because the collocation cage is [18] in an overall area, where environmental [19] conditioning is providing for other CLECs that have [20] transmission equipment. In the assembly room there [21] would be no electronics, no transmission equipment [22] at all, appearing. The assembly room would be for [23] the purposes of recombining loops to switch ports [24] for the specific arrangements we specified, which I

Page 190

[1] think were POTS. I think ISDN was in there.

[2] Now, for those combinations you don't [3] need any battery, you don't need any power [4] equipment. All you need are these cross-connect [5] blocks and cables. So there's no electronics; [6] there's no transmission equipment. We thought this [7] would be something that would be an attractive [8] savings compared to what the conventional physical [9] collocation space surrounding a common area is.

[10] So by putting these blocks in, they [11] don't need the environmental. They don't need the [12] temperature. They don't need the dust. They don't [13] need the air conditioning. They don't need the [14] power leading to it. So that unto itself is [15] cheaper space to provide.

[16] MR. LEVY: Ms. Barbulescu?

[17] CROSS-EXAMINATION

[18] BY MS. BARBULESCU:

[19] Q: Ms. Brown, you stated before that UNE [20] combinations were less expensive than resale. [21] Could you please provide —

[22] MS. BARBULESCU: Mr. Levy, I'd like [23] to ask a record request, that Ms. Brown provide all [24] the backup analysis that went into that conclusion

Page 191

[1] for all the density zones in Massachusetts.

[2] A: [BROWN] I think we're going to be [3] providing something similar to that in the record [4] request that we're going to be providing for the [5] DTE.

[6] MR. LEVY: I missed the beginning of [7] what you were asking.

[8] Q: I thought it was a different question [9] from the one that Mr. Levy had asked for before. [10] The information I asked for was the cost analysis [11] that led Ms. Brown to her conclusion that UNE [12] combinations were less ex-

pensive than resale in [13] Massachusetts. I'd like it for all density zones.

[14] A: [BROWN] Sure.

[15] MR. LEVY: Actually, I had asked for [16] a few examples. Yours is a larger request than [17] that, I think. So, to the extent answering Ms. [18] Barbulescu's request takes care of the other one, [19] you can just do hers.

[20] WITNESS BROWN: We'll make sure [21] they're both answered.

[22] MR. LEVY: That was Record Request [23] No. 11.

[24] (RECORD REQUEST.)

Page 192

[1] Q: The final question I have, and then I [2] think Mr. Mandl has some questions for you: With [3] respect to the switch-subplatform proposal, what [4] CLEC asked BA to develop that proposal, or is that [5] something that Bell Atlantic just developed on its [6] own?

[7] A: [BROWN] I don't know.

[8] Q: Do you know if any CLECs have requested [9] purchasing such a combination?

[10] A: [BROWN] I don't know.

[11] Q: Could I ask another record request, that [12] we find out whether any CLECs have requested this [13] from Bell Atlantic, either the development of such [14] a proposal or an actual combination.

[15] MR. LEVY: That would be Record [16] Request 12.

[17] (RECORD REQUEST.)

[18] CROSS-EXAMINATION

[19] BY MR. MANDL:

[20] Q: Just a few questions. I'd like to ask [21] the witnesses first about the enhanced extended- [22] loop-service proposal. Under that proposal the [23] CLEC that wants to use the UNE loops would have [24] those loops delivered to one collocation node per

Page 193

[1] LATA; is that right?

[2] A: [ALBERT] If they chose. They could have [3] them delivered to more. But a minimum would be one [4] per LATA. If they wanted to drop them off at [5] additional locations, they certainly could.

[6] Q: Has the company developed a rate for this [7] enhanced extended-loop service?

[8] A: [BROWN] I don't believe that has been [9] developed for Massachusetts at this time.

[10] MR. LEVY: Can I stop you for a [11] second? Can we believe that the rate is anything [12] other than the combination of the two UNE rates; [13] that is to say,

transport and link?

[14] **WITNESS ALBERT:** There's some [15] multiplexing in there. I'm not sure in terms of [16] rates and elements where that would get captured. [17] But that functionality has to be

[18] **WITNESS BROWN:** All the costs may be [19] covered in UNE rates we've already provided. I [20] just simply don't know, sitting here. We'd be glad [21] to take a look at that. But it's sort of an Amy [22] question, and she's not here. I don't know the [23] answer specifically, but I'd be glad to get you the [24] information.

Page 194

[1] **MR. LEVY:** I'd like to make that a [2] record request, No. 13, as to what the rate [3] elements would be for enhanced extended-loop [4] service.

[5] **(RECORD REQUEST.)**

[6] **Q:** If a CLEC were to use enhanced [7] extended-loop service, it would be running loops [8] from a number of different locations within a LATA [9] to this single collocation node; correct?

[10] **A:** [BROWN] If you chose to use it that way, [11] yes.

[12] **A:** [ALBERT] And from a number of different [13] central offices, which would then be collected [14] together, and then it would be a number of loops [15] within each one of those central offices collected [16] together and then taken to the single point in the [17] LATA.

[18] **Q:** For calls originating from these [19] different central offices and traveling to the [20] single collocation node in a LATA, how would those [21] calls be rated?

[22] **A:** [BROWN] That would depend on how the [23] CLEC assigned telephone numbers to the loops.

[24] **Q:** Well, let's go back to the basics of the

Page 195

[1] serving arrangement and start with an end user who [2] was served through this enhanced extended-loop [3] service. There will be a loop from that customer's [4] premises going somewhere. Whose loop will that [5] be? Will that be a Bell Atlantic loop?

[6] **A:** [ALBERT] Yes.

[7] **A:** [BROWN] Yes.

[8] **Q:** And that loop will travel where?

[9] **A:** [ALBERT] To Bell Atlantic's central [10] office.

[11] **Q:** To a Bell Atlantic central office.

[12] **A:** [ALBERT] To the Bell Atlantic central [13] office that it is served by.

[14] **Q:** So the call is originating, let's say, [15] hypothetically, in one wire center in the LATA, and [16] it's traveling to this single collocation node that [17] might be

in another wire center in the LATA; [18] correct?

[19] **A:** [BROWN] Right. Why don't we call the [20] first Wire Center A and the second one B.

[21] **Q:** And once the call reaches this [22] collocation node, then where does it go?

[23] **A:** [ALBERT] Then the CLEC would put the [24] connections onto their transport facilities to

Page 196

[1] carry that loop to their switch, wherever it may be [2] located, to deliver dial tone to it.

[3] **Q:** The location of the CLEC switch — in [4] that scenario, how will the rating of the call be [5] determined? If we have a call originating in one [6] wire center off of this enhanced extended loop, it [7] travels into another wire center in the LATA where [8] the collocation site is located, and then it's [9] transported to the CLEC's switch, which may be in [10] yet a third wire center within the LATA. How is a [11] call like that going to be rated?

[12] **A:** [BROWN] Let's talk about what we mean by [13] "a call." The end user in Office A is getting [14] dial tone from, let's say, MCI's switch, which is [15] located near Office B. MCI's switch — a number is [16] going to be assigned to the end user in Office A. [17] That number will have an NNX that's associated with [18] an exchange area that's been designated. Are we [19] together at this point?

[20] Now, who's making the call? If the [21] customer out of Office A — and let's give them a [22] 555 exchange, just for some novelty here. The [23] customer in Office A has a 555 number assigned by [24] the CLEC. What are you asking me, how that

Page 197

[1] customer's call is going to be rated? What are we [2] rating here?

[3] **Q:** Well, a call originates with the end [4] user, who is physically located within —

[5] **A:** [BROWN] He draws dial tone off of the [6] CLEC's switch with a number that's associated with [7] his end office. It's a call to where?

[8] **Q:** The call is going to — let's say it's [9] within the LATA, going to a wire center that's not [10] where the CLEC's switch is located, a different [11] wire center.

[12] **A:** [BROWN] Let's say it's Wire Center C. [13] In your example, the telephone number that the CLEC [14] has assigned to the customer out of Office A is [15] assigned to Office A for rating purposes. That's [16] what the basic interconnections that we've done in [17] prior hearings, the recurring charges — we [18] assigned the number to a center. So it's as if [19] that call is coming from Center A

and going to [20] Center C, I think is what the question is. It's [21] terminating back to our network.

[22] **MR. LEVY:** I think the question is: [23] Is there anything about this extended-loop-service [24] arrangement that would change the way in which a

Page 198

[1] particular call is rated for a particular customer [2] whose call ends up going through this extended-loop [3] service? Does it change anything about the billing [4] that would occur for that call?

[5] **WITNESS BROWN:** To the best of my [6] knowledge, the answer is no, because the billing's [7] not done off the loop end, it's done from the [8] CLEC's — it's assumed that the call is coming from [9] the CLEC's switch, it's coming into our LATA. For [10] rating purposes, it's rated, as I understand our [11] agreements, from the NNX, which for rating purposes [12] is out of Office A. So from a rating standpoint, [13] it's transparent. The driver here is where the NNX [14] is assigned to. And the loop function isn't [15] relevant. The loop function of enhanced extended [16] loop is bringing it to the CLEC's cage so it can go [17] to the CLEC's switch.

[18] **WITNESS ALBERT:** We're providing an [19] alternative means of transport for the CLEC to get [20] from that loop to their switch that provides dial [21] tone. So rather than the CLEC having to collocate [22] in the Bell Atlantic office and carrying it that [23] way to their switch, this is an alternative way for [24] them to take that loop and carry it to their

Page 199

[1] switch.

[2] **Q:** Let's use this hypothetical. There's an [3] MCI customer in Wire Center A physically located [4] within Bell Atlantic's Wire Center A, using [5] enhanced extended-loop service. It makes a call [6] which goes to the collocation node in Wire Center B [7] and then is transmitted to Wire Center C, where [8] MCI's switch is located. It happens that the [9] person that is being called is across the street [10] from Wire Center A. That call will be rated [11] differently than would a call that originated in [12] Wire Center A through a collocation arrangement in [13] Wire Center A and is transported to the receiving [14] party in Wire Center A, won't it?

[15] **A:** [BROWN] I don't agree. I mean, this is [16] a CLEC call.

[17] **A:** [ALBERT] That's the same-same.

[18] **A:** [BROWN] I don't think I agree with your [19] example.

[20] **MR. LEVY:** Is the issue here how it's

[21] rated from the point of view of the customer versus [22] how much the CLEC is paying to have that call [23] delivered and sent back?

[24] MR. MANDL: Yes.

Page 200

[1] A: [BROWN] I don't understand.

[2] MR. LEVY: Which are you asking?

[3] MR. MANDL: We went through this in [4] the area-code proceeding.

[5] A: [BROWN] How the CLEC rates the call is [6] up to the CLEC. It's a CLEC customer coming off a [7] CLEC switch. So how you choose to have your [8] calling areas is your choice. The relevant charges [9] from Bell Atlantic are the interconnection charges, [10] reciprocal compensation in the case of this call. [11] I think those rules pretty clearly establish as to [12] which charges apply, how they're applied.

[13] Q: We went through this in the area-code [14] case, where the CLECs, if you will, stressed the [15] importance of having numbers assigned in individual [16] wire centers for local calls, for the reason that [17] if they were taking — if they were serving a given [18] area through a switch that was on a different wire [19] center, the calls would be rated differently by [20] Bell Atlantic and the end users would end up paying [21] more for a call that went through that type of [22] routing.

[23] A: [BROWN] I don't know what you went [24] through in the area-code case; but in what I just

Page 201

[1] described to you, I think your concern is dealt [2] with in that the CLEC assigns the three-digit [3] number to the end office.

[4] Let's say we had six different end [5] offices; that the CLEC chose to take customers from [6] those end offices and bring them all into one [7] collocation cage. The CLEC certainly has the [8] option of taking six NNX codes, assigning one to [9] each end office, and assigning customers it has in [10] that end office numbers from that NNX code. The [11] CLEC tells Bell Atlantic what the NNX office is for [12] rating purposes. So whether you locate in all six [13] end offices or have those loops hauled back to one [14] collocation cage is irrelevant for rating [15] purposes.

[16] A: [ALBERT] For rating purposes, how the [17] CLEC gets to their switch and even where that [18] switch is located doesn't make any difference. We [19] have had cases where the end-user loop is in [20] Baltimore, the first remote switch of the CLECs was [21] in northern Virginia, and the actual switch where [22]

they got their dial tone was in Texas. In those [23] arrangements the switch can be anywhere, and it [24] doesn't matter how they get there, but the calls

Page 202

[1] are still rated the same.

[2] Q: In the area-code proceeding it was [3] discussed that CLECs needed NNX codes on a wire- [4] center basis in order to have calls rated as local [5] calls within that wire center.

[6] A: [BROWN] Yes.

[7] Q: Do you agree with that?

[8] A: [BROWN] If you have — the example I [9] gave, in the Office A, the exchange wire center [10] we're talking about — we're talking about an [11] exchange here. The example I gave you is, you [12] would put an NNX in each exchange, and that would [13] be associated with that exchange, and calls to that [14] number would be local or toll, depending upon who [15] was calling it. The rating that the CLEC puts on [16] the call is up to the CLEC. But if you're asking [17] if Bell Atlantic customers calling that number [18] would have their calls rated as if they were going [19] right within the exchange, A to A or B to A, [20] whatever was the appropriate or relevant tariff is [21] charged.

[22] Q: In the area-code situation, if a CLEC [23] were serving the customer in Wire Center A but did [24] not have NNX codes associated with Wire Center A,

Page 203

[1] there are some calls that would be rated as toll [2] calls rather than local calls as a result of the [3] lack of NNX's in Wire Center A. Isn't that right?

[4] A: [BROWN] I think you're setting up a [5] different hypothetical. In that you're saying, if [6] a CLEC doesn't have enough numbers and he brought [7] calls in from — assigned one code and assigned it [8] to an office, it has nothing to do with our [9] enhanced extended-loop offering. It has to do with [10] the CLEC's numbers and the CLEC's ability to assign [11] an NNX code per exchange area.

[12] Q: If a CLEC has a customer in Wire Center [13] A, has its switch in Wire Center C, isn't it going [14] to have numbers associated with Wire Center C?

[15] A: [BROWN] It can have numbers associated [16] with —

[17] A: [ALBERT] The whole state, if they want.

[18] A: [BROWN] — the whole state. We may have [19] 267 exchanges, wire centers, whatever we're talking [20] about here — places where you have for rating [21] purposes. A CLEC can have one switch. You can map [22] to whatever number — those numbers to whatever

[23] places they want to for rating purposes. But [24] that's not the function of enhanced extended loop.

Page 204

[1] Q: You're saying irrespective of where the [2] CLEC's switch is within a LATA the CLEC has the [3] ability to reserve NXX codes that relate to wire [4] centers in which the switch is not located?

[5] A: [BROWN] Of course. I'm not aware of any [6] CLEC that is planning to have switches to be [7] coterminous with each and every one of our [8] switches. I don't know of any requirement to do [9] that.

[10] Q: And if a CLEC were unable to obtain all [11] these NXX codes to match up with each and every [12] wire center in a LATA where it didn't have those [13] NXX codes, then the calls would be rated [14] differently.

[15] A: [BROWN] Well, we aren't talking about [16] enhanced extended loop. What you're talking about [17] is NPA and NPA exhaust and the inability of NNX's. [18] It has nothing to do with enhanced extended loop.

[19] Q: But the enhanced extended loop, if you [20] will, is not predicated upon CLECs having switches [21] in each and every existing Bell Atlantic wire [22] center.

[23] A: [BROWN] No.

[24] A: [ALBERT] They don't even need to have

Page 205

[1] one in the state.

[2] MR. LEVY: Before you go on to the [3] next topic, Mr. Mandl: May I just make clear, on [4] the record request I made before about the rate [5] elements which would apply to extended-loop [6] service: As part of that, one of the things I'm [7] curious about is how you would plan on pricing the [8] transport portion of that. Do you view it as [9] dedicated, as shared? Do you require the CLEC in [10] essence to buy the full capacity of the transport [11] trunk for a given number of links coming in? Do [12] you understand the kinds of questions I'm asking?

[13] WITNESS BROWN: Yes.

[14] MR. LEVY: Is there a ratio of links [15] coming in to capacity of transport going out that [16] you would apply?

[17] WITNESS BROWN: It's one-per-one.

[18] MR. LEVY: One link, one transport?

[19] WITNESS BROWN: In other words, if [20] you could get a DS1, it had the capacity for 24 [21] links to put on; if you get a DS3, it's a [22] multiplying factor that's up to 600 or something.

[23] MR. LEVY: The question I'm asking, [24] let's say there are 24 links coming in

and a DS1

Page 206

[1] could handle all of those coming out. Are you [2] designing and pricing it as though all of those [3] links are using the DS1 at the same time?

[4] **WITNESS BROWN:** It's MUXed to the [5] degree it's brought up so that it can be put on the [6] piece of equipment. But you have 24 talk paths. [7] There's no ratio — there's no switching or —

[8] **WITNESS ALBERT:** No switching or [9] concentration.

[10] **WITNESS BROWN:** — or concentration.

[11] **WITNESS ALBERT:** They're multiplexed [12] together digitally, but it's still bandwidth for [13] one output to match up to the bandwidth for one [14] input. The CLEC can determine how much output they [15] buy, but they've at least got to have enough output [16] to handle the incoming input. They can buy more [17] output than you need, but they don't have to. But [18] you've got to at least have enough output to handle [19] the incoming input.

[20] **MR. LEVY:** Or else you get some [21] blockage.

[22] **WITNESS ALBERT:** Or it doesn't work. [23] There's no blockage that occurs. It's the [24] equivalent of each end user having their full pair

Page 207

[1] of wires loop all the way from their telephone set [2] to the CLEC's switch. It's the functional [3] equivalent of what we're providing.

[4] **MR. LEVY:** So it is like an FX or a [5] private line.

[6] **WITNESS ALBERT:** Yes.

[7] **WITNESS BROWN:** Yes.

[8] **WITNESS ALBERT:** It's the same way we [9] lump our end users together to move them on [10] interoffice transport.

[11] **MR. LEVY:** And is that what you [12] actually do with FX and private line now?

[13] **WITNESS ALBERT:** Yes.

[14] **MR. LEVY:** Why was I under the [15] impression that there's more of a virtual private [16] line or a virtual FX, where there actually is [17] switching involved, so that you can achieve some [18] efficiencies down the network on the transport part [19] of the connection? Is that wrong?

[20] **WITNESS ALBERT:** Do you know what we [21] do?

[22] **WITNESS BROWN:** I can't respond to [23] that.

[24] **WITNESS ALBERT:** There are ways

Page 208

[1] technically to do that. I'm not aware if we do or [2] if we don't in Massachusetts.

[3] **MR. LEVY:** I'm going back ten years, [4] where I thought the movement was from actual [5] private line to virtual private line, where the [6] idea was that you would not actually dedicate [7] particular facilities.

[8] **WITNESS ALBERT:** There are types of [9] data-switching technology where that is the case. [10] But for voice traffic and for foreign-exchanging [11] types of arrangements, it's full-period input to [12] output. When you get to data type of traffic, [13] there are other types of multiplexing, other types [14] of concentration and switching technology, that [15] allow you to do crunching of bandwidth; but not for [16] the voice-type calls.

[17] **MR. LEVY:** Thank you.

[18] **Q:** Mr. Albert, I think you testified earlier [19] about trouble-report rate comparisons between [20] unbundled-loop provisioning and retail services. [21] Do you recall that?

[22] **A:** [ALBERT] That's correct.

[23] **Q:** I guess by definition there must be [24] documentation that would indicate what those

Page 209

[1] comparisons show?

[2] **A:** [ALBERT] Yes. I've got stuff for [3] January, February, and March.

[4] **Q:** For Massachusetts?

[5] **A:** [ALBERT] Yes.

[6] **MR. MANDL:** I'd like to make a record [7] request, to just take a look at those trouble [8] reports, the comparisons.

[9] **A:** [ALBERT] I've got the rate. It's [10] expressed as a rate per 100.

[11] **MR. LEVY:** That's No. 14.

[12] **(RECORD REQUEST.)**

[13] **Q:** In one of these serving arrangements [14] proposed by Bell Atlantic — I think it was virtual [15] collocation — there was some discussion about the [16] need for tie cables. Do the tie cables relate [17] solely to the virtual-collocation proposal?

[18] **A:** [ALBERT] No. The tie cables also would [19] be used for physical collocation. Tie cable is the [20] cabling arrangement within our central offices to [21] get from our main distributing frame to either a [22] physical collocation cage or to get to an assembly [23] room or to get to a piece of virtually collocated [24] equipment.

Page 210

[1] **Q:** Taking the virtual-collocation [2] arrangement: Would there be a charge

for the [3] provisioning of these tie cables?

[4] **A:** [ALBERT] I'm not sure of the rate [5] structure. I mean, we don't do it for free, but [6] I'm not sure of the rate structure of how that gets [7] recovered. I think there's a rate element called a [8] cross-connector or a SAC. But I'm not sure if that [9] matches exactly one for one with just strictly the [10] tie cable or if there are other components involved [11] or not. But we don't do it for nothing.

[12] **Q:** At this time has the company developed [13] any rate proposals or rate levels for virtual [14] collocation in Massachusetts?

[15] **A:** [BROWN] Yes.

[16] **MR. LEVY:** You have?

[17] **WITNESS BROWN:** We are in the process [18] of developing them.

[19] **A:** [BROWN] Did I misunderstand your [20] question? I'm sorry.

[21] **Q:** I had asked had the company, and I guess [22] you've indicated you are in the process.

[23] **A:** [BROWN] We're in the process.

[24] **Q:** They haven't been produced, though, as

Page 211

[1] part of the company's comments?

[2] **A:** [BROWN] No, but we hope that we will be [3] filing them very shortly.

[4] **Q:** In the company's discussions with CON-X, [5] has it obtained any order of magnitude for [6] installation of the CON-X equipment?

[7] **A:** [ALBERT] Not that I'm familiar with.

[8] **Q:** Has the company performed any analysis of [9] the life-cycle costs of the CON-X equipment?

[10] **A:** [ALBERT] Life-cycle costs? I don't [11] know.

[12] **Q:** Do you know what the annual costs would [13] be for operating and maintaining that equipment?

[14] **A:** [ALBERT] No, I don't.

[15] **Q:** Do you know if the CON-X equipment is [16] undergoing any further industry standards testing [17] before any greater deployment?

[18] **A:** [ALBERT] For the purposes of us [19] deploying them in Bell Atlantic's network, they [20] have passed all the tests that we would require. [21] So some of the tests Mr. Kennedy talked about, the [22] NEBS tests, which are a series of different tests [23] for either deploying equipment in the central [24] office, and then another series of tests for

Page 212

[1] deploying the equipment in the

outside plant — [2] they have passed all those. Those are Bellcore [3] tests.

[4] They do a variety of funky things, [5] like set it on fire and see what it does and blow [6] salt at it and try and explode it. There are a [7] whole number of items like that — simulate [8] earthquakes. It's passed all those, to the point [9] where it's okay to put in the CO and okay to use in [10] the network in the outside plant.

[11] Q: Does Bell Atlantic make any use of this [12] CON-X equipment other than virtual collocation?

[13] A: [ALBERT] Yes. The ones I'm worked [14] with — that's why I'm familiar with the [15] equipment. The ones that we've established in [16] Maryland that Mr. Kennedy was talking about, we've [17] used those in an outside-plant application. We've [18] also had ones that we've stress-tested in northern [19] Virginia. We are in final price negotiations with [20] CON-X for ones that we will buy and use for [21] purposes of our own network. That's not virtual [22] collocation, because we don't virtually collocate [23] ourselves. But we do deploy equipment for our own [24] use and own purposes, and we are going to be buying

Page 213

[1] some of CON-X's equipment.

[2] Q: Will it be a different model for your [3] outside-plant purposes than for virtual-collocation [4] purposes?

[5] A: [ALBERT] Yes, the two are slightly [6] different, the packaging and the tests that they [7] have passed. The basic unit itself, though, is the [8] same thing. The packaging is different, but the [9] unit's the same.

[10] Q: If we can turn to Page 15 of the [11] company's comments. This is in regard to the [12] assembly room.

[13] I am going to withdraw what I was [14] going to ask.

[15] MR. MANDL: That's it. Thank you.

[16] MR. LEVY: Ms. Thurston, any [17] questions?

[18] MS. THURSTON: No.

[19] MR. LEVY: Any redirect?

[20] MR. BEAUSEJOUR: No, Mr. Levy.

[21] MR. LEVY: Thank you very much for [22] coming.

[23] JAMES O. CARLSON, Previously Sworn [24] MS. THURSTON: I don't know what the

Page 214

[1] process should be. We didn't present any prefiled [2] testimony. We don't have a formal presentation. [3] Mr. Carlson is here primarily to answer any [4] questions that you may have of him or any of the [5] other parties. He does have a brief opening [6] statement he can give on our

general policy.

[7] MR. LEVY: That would be great. And [8] if you could just give us your full name and your [9] current job, I'd appreciate that.

[10] THE WITNESS: Let me begin with [11] that. My name is James O. Carlson. I work for [12] Sprint Communications Company LLP. My address is [13] 8140 Ward Parkway, Kansas City, Missouri 64114.

[14] My title at Sprint is manager, [15] regulatory policy and coordination. Specifically [16] in that role I get involved with regulatory issues [17] that deal with Sprint's entry into the local- [18] telephone market. So that's kind of the niche that [19] I've gotten into.

[20] I'm going to share just a few [21] thoughts this afternoon, with the intent on keeping [22] it brief so I can get my son a Celtics hat at the [23] airport before I catch my plane.

[24] Let me make a few short statements

Page 215

[1] that relate to Sprint's concerns about the issues [2] before us. Let me begin by stating the obvious: [3] For telecommunications services to be provided, [4] network elements have to be combined. Given this, [5] if CLECs like Sprint want to use Bell Atlantic's [6] unbundled network elements, as we do, they have to [7] be combined. You just can't get around that.

[8] So the question here today is, who [9] does the combination? Now, Bell Atlantic and [10] Sprint disagree over whether the Department has [11] authority to order Bell Atlantic to combine network [12] elements for CLECs. I'm not a lawyer, so I'm not [13] going to make any legal arguments here. And since [14] Sprint's position is clearly outlined in its [15] petition filed with the Department on April 16th, [16] I'll only say that it's Sprint's position that the [17] Department does have the authority to adopt [18] Sprint's proconsumer proposal.

[19] So what I do want to talk about today [20] is what action the Department should take on the [21] topic of who does the combination. I think it [22] makes sense to first begin the discussion by [23] talking about the criteria that should be used in [24] answering the important question of who does the

Page 216

[1] combination or who needs to do the combination. As [2] I said, I live in Kansas City, Missouri. Currently [3] on the radio and television there's a public- [4] awareness campaign going on that's directed at [5] decisionmakers in the city. What the ads basically [6] say is that when decisions are made a question [7] should be asked. The point that's being made in [8]

that ad campaign is that the question ought to be [9] asked, how would it affect the children?

[10] Borrowing from that theme, I'd like [11] to suggest a similar question ought to be asked by [12] the Department within this context: How would it [13] affect consumers in Massachusetts? Obviously, Bell [14] Atlantic and the CLECs are advancing dissimilar [15] positions. In my mind, obviously the challenge is [16] for the Department to weigh each party's argument [17] and make a determination based on how it affects [18] consumers in Massachusetts.

[19] Sprint's overall position in this [20] proceeding is that it's in the customers' interests [21] that Bell Atlantic be required to combine UNEs for [22] CLECs in the same manner as they combine network [23] elements for their own customers today, and that [24] CLECs should fully compensate Bell Atlantic for

Page 217

[1] that combination work at appropriately developed [2] cost-based rates. Under Sprint's proposal, [3] Massachusetts consumers' phone service would not be [4] disconnected, would not be put at risk due to new [5] multiple points of failure in the network, and the [6] costs of implementing local competition would be [7] kept at a minimum — costs which consumers could [8] eventually bear.

[9] So back to the original question: [10] How would Sprint's proposal affect consumers in [11] Massachusetts? The answer, at least in my opinion, [12] is that it protects phone service, it protects the [13] development of local-exchange competition, and it [14] minimizes consumer costs.

[15] Now let's look at Bell Atlantic's [16] proposal and ask the same questions: How would it [17] affect consumers in Massachusetts? First, under [18] Bell Atlantic's proposal, if a CLEC wants to buy an [19] unbundled loop and unbundled switching, unnecessary [20] telecommunications equipment would be inserted into [21] their network, requiring phone service to be [22] disconnected for a period of time, and putting [23] phone service at risk due to new multiple points of [24] failure in Bell Atlantic's network. This is not

Page 218

[1] good for consumers.

[2] Second, Bell Atlantic's proposal [3] creates the need for numerous manual steps to be [4] taken by Bell Atlantic and the CLECs to provision [5] service, steps which, if there is any [6] miscommunication, could lead to delay in the time [7] it takes for CLECs to provision services. This [8] delay will only frustrate

the CLEC's customers, [9] which could then cause them to go back to Bell [10] Atlantic. Bell Atlantic would not face this [11] potential obstacle, and therefore their proposal [12] creates a barrier to entry that will only frustrate [13] the development of local-exchange competition. [14] This is not good for consumers in Massachusetts.

[15] Finally, Bell Atlantic's proposal [16] creates a whole host of new costs which add no [17] value at all. New equipment must be added to the [18] network. Noncost-based glue charges. New manual [19] processes would have to be created. Assembly rooms [20] would have to be constructed. All these items [21] create costs which serve no benefit and add no [22] value to consumers in Massachusetts. Both Bell [23] Atlantic and the CLECs would incur these costs, and [24] those costs could potentially be passed on to

Page 219

[1] consumers in Massachusetts.

[2] In conclusion, I would like to [3] reiterate that Sprint recommends that the [4] Department require Bell Atlantic to combine network [5] elements for CLECs in the same manner as it does [6] for its own customers today. Sprint's proposal is [7] procompetition, pro-Massachusetts consumer, and [8] should be adopted. Thank you.

[9] EXAMINATION

[10] BY MR. LEVY:

[11] Q: Would you like to address the arbitrage [12] issue that Bell Atlantic has discussed, the idea [13] that if a CLEC has the option of, in essence, [14] purchasing the same service either on a resale [15] basis or a UNE-combination basis, it will obviously [16] pick the lower-priced way of doing that and that [17] that conflicts with the overall framework set forth [18] in the Act?

[19] A: I'd be glad to. You made an important [20] point in your question, and that is CLECs buying [21] the same service. When I think of arbitrage, [22] normally the way I think of it is in the access [23] world, where Sprint terminates long-distance [24] traffic to Bell Atlantic today, let's say in

Page 220

[1] Boston, and that traffic can come from another part [2] of the state or it can come from another part of [3] the country. But as it comes to Bell Atlantic, [4] it's a minute is a minute is a minute. But Bell [5] Atlantic's tariff could look different, most likely [6] does, whether it's intrastate minutes or interstate [7] minutes.

[8] IXC's, since Sprint has to report to [9] Bell Atlantic the percentage of interstate usage [10] that it has, and since that

percentage drives [11] whether minutes are billed from their interstate [12] tariff or intrastate tariff, an arbitrage [13] opportunity exists there, where an IXC — Sprint [14] doesn't do it. I'm sure AT&T and MCI don't do [15] this. But an IXC could cheat on its PIU factors [16] and say, "Well, I've got more interstate minutes, [17] if I can get a better price on interstate." The [18] important distinction there, as you said in your [19] question, it's the same service, a minute's a [20] minute's a minute — and it's really just a pricing [21] difference.

[22] Where Sprint has a fundamental [23] difference with Bell Atlantic and why we say it's [24] not arbitrage, is that there are fundamental

Page 221

[1] differences between buying unbundled network [2] elements, even using the platform proposal, and [3] buying a wholesale service.

[4] Now, I would agree that the network [5] is the same. As has been laid out in the record so [6] far, the network needs to stay intact. The network [7] is the same, but when you buy UNEs and when you buy [8] a wholesale service, you're talking two different [9] things. I think it's totally consistent with the [10] Act that laid out two different ways of approaching [11] market entry that a CLEC will make a decision [12] whether to purchase UNEs, even using a platform, [13] and purchasing a resold service based on a lot of [14] different factors.

[15] For example, there are additional [16] risks in buying UNEs that you don't see when you [17] buy resold services. For example, in the retail [18] market the prevailing market structure or rate [19] structure for local service could be flat-rated; [20] but if a CLEC buys unbundled local switching from [21] the incumbent local-exchange carrier, they're going [22] to pay for it on a minute-by-minute basis. Well, [23] there's a risk that if their customer is a big [24] Internet user they could end up having a whole lot

Page 222

[1] of Internet minutes in the month, which are local [2] minutes, which means the CLEC could find that it's [3] paying more in UNE charges for local switching than [4] what it's getting in revenues. The point I'm [5] making is, because when you buy UNEs you're buying [6] based on how the costs are incurred and not based [7] on a discount, there's some additional risks.

[8] Now, there are other things, like if [9] you're buying UNEs you have to invest in being able [10] to bill and collect access services. You have to [11] have relationships with IXCs that you don't have to [12] have if you're buying resold services.

You have to [13] deal with reciprocal compensation for terminating [14] traffic; that's an issue that you don't have to [15] deal with when you're simply buying a wholesale [16] service.

[17] My point in the wholesale discussion [18] is, I don't think there is an arbitrage situation [19] because I think fundamentally it's two different [20] ways of approaching it, whether you buy UNEs using [21] the combination or whether you buy a wholesale [22] service.

[23] MR. LEVY: Commissioner Vasington has [24] some questions.

Page 223

[1] EXAMINATION

[2] BY COMMISSIONER VASINGTON:

[3] Q: Is there anything short of the UNE [4] platform, any level of combination that's feasible [5] for Sprint to offer service?

[6] A: Well, I think the sticking point here is [7] the loop-and-switch combination. I want to make [8] sure I'm answering your question. That's the piece [9] that Sprint needs, and that's the piece that Bell [10] Atlantic is not offering. I mean, I think that [11] Bell Atlantic's switch subplatform addresses some [12] of the issues with being able to combine switching [13] and transport together. I disagree with their glue [14] charge that they're proposing to do that, because [15] that's not going to be cost-based. But that seems [16] to begin to address some of the issues.

[17] The real heart of the issue, though, [18] for Sprint is wanting to have that loop and that [19] switching combined and wanting Bell Atlantic to do [20] it, willing to pay for it — you know, whatever [21] costs are created, legitimate costs are created, [22] we'll pay for. But that's kind of the fundamental [23] issue, is being able to link loops and ports [24] together.

Page 224

[1] Q: Is Sprint using unbundled network [2] elements to provide local service anywhere right [3] now?

[4] A: Not to my knowledge. We're providing [5] local service in California. I believe we're only [6] doing that through resold services through [7] wholesale discounts.

[8] Q: Thank you.

[9] EXAMINATION

[10] BY MR. LEVY:

[11] Q: How about the extended-loop service that [12] Bell Atlantic is proposing? Is that helpful?

[13] A: I guess it is and it isn't. It's [14] somewhat helpful to be able to hook a loop to [15] transport together. The problem I have, again, is [16] the glue

charge that they're combining, which is [17] not going to be cost-based, which I think is [18] discriminatory. It begins to address the issue if [19] your entry strategy is to have a switch in the [20] state and you want to be able to transport loops [21] back to it.

[22] Now, I'm not sure I altogether [23] understand their proposal. When I read it, it [24] sounded like they were limiting it to voice-grade,

Page 225

[1] and my note said 2R analog and ISDN-capable loops. [2] I'm not sure how you would hand a DS1 or DS3 and if [3] you'd have to buy that in a different way. That [4] point is a little unclear to me.

[5] Q: It's a little off the topic; but in your [6] view, is the discount that Massachusetts has set [7] for resale service, is that sufficiently large to [8] permit CLECs to enter that market profitably?

[9] A: Well, I'll tell you that what we have [10] found in California, where we are offering service, [11] that the problems are much greater and the [12] opportunity for making a reasonable contribution is [13] much smaller. So we haven't found that it's been [14] particularly profitable out there.

[15] I'm not aware — Sprint is in the [16] process of doing some modeling in other states [17] where we have looked at providing service based on [18] just wholesaling services, buying a wholesale [19] service, and found that it is very much a struggle [20] to be profitable.

[21] I think what CLECs are finding is [22] that they need to — in order to have that [23] profitability, they need to be able to bill for [24] access; they need to be able to provide service

Page 226

[1] using unbundled network elements. But it becomes [2] problematic, though, when you introduce glue [3] charges and things like that that only add to the [4] cost of buying the service or buying the unbundled [5] network elements.

[6] Q: On the resale side of things, is the [7] prohibition against joint billing, joint [8] marketing — is that part of the problem?

[9] A: Well, no, that's not part of the [10] problem. That prohibition will exist until [11] February of next year or until the RBOC would get [12] into the long-distance business. No, that's not [13] the problem per se. The problem, what we have seen [14] is that even a discount of 20 percent does not [15] adequately make up for the market-entry costs and [16] the other costs, the customer churn and things like [17] that, that CLECs are experiencing.

[18] MR. LEVY: Any questions?

[19] MR. BEAUSEJOUR: Yes, I do, Mr. Levy, [20] just a couple.

[21] CROSS-EXAMINATION

[22] BY MR. BEAUSEJOUR:

[23] Q: Mr. Carlson, do you know what the resale [24] discount is in Massachusetts?

Page 227

[1] A: Not specifically. I'm going to guess [2] it's in the 20's, based on what I've heard today. [3] But I don't know specifically what it is.

[4] Q: Have you done any analysis about the [5] profitability of offering resold services in [6] Massachusetts based on the discount set by the [7] Department?

[8] A: I have not personally done that. We have [9] a group within Sprint who does that kind of [10] analysis. I'm not sure if they've done it for [11] Massachusetts.

[12] Q: Have you ever seen an analysis that [13] Sprint has done for Massachusetts?

[14] A: No.

[15] Q: Let us assume for the moment that the [16] Department does not order Bell Atlantic to combine [17] unbundled network elements for a CLEC. Does Sprint [18] have a proposal for how Sprint would obtain access [19] to the individual elements so that they can combine [20] them?

[21] A: Well, our position is that Bell Atlantic [22] should be required to combine them. With that [23] said, once an order is adopted and we've gone [24] through all the legal ins and outs to challenge it,

Page 228

[1] then we'll have to live with whatever is on the [2] table. But we're not offering anything short of a [3] UNE combination.

[4] Q: So you're making no proposal to the [5] Department in the event that the Department does [6] not order Bell Atlantic to provide UNE [7] combinations.

[8] A: No.

[9] MR. BEAUSEJOUR: I have no further [10] questions, Mr. Levy.

[11] MR. LEVY: Anyone else? Ms. [12] Thurston, any redirect?

[13] MS. THURSTON: No.

[14] MR. LEVY: Thank you very much for [15] coming. I appreciate your patience through all the [16] long day.

[17] Our plan is to adjourn for today and [18] reconvene on May 15th with the witnesses from MCI [19] and AT&T at that time. So we'll stand adjourned.

[20] I would, however, like to talk to the [21] parties briefly after the close of the record.

[22] (4:45 p.m.)

Page 229

CERTIFICATE

I, Alan H. Brock, Registered Professional Reporter, do hereby certify that the foregoing transcript is a true and accurate transcription of my stenographic notes taken on May 1, 1998.

Alan H. Brock
Registered Professional Reporter

Lawyer's Notes

\$

\$1.60 48:24; 49:14
\$10 44:16
\$100 million 180:15
\$14 43:11
\$15 42:13
\$19 43:6
\$20 43:23
\$20,000 67:9; 148:5, 9
\$200,000 132:4
\$33,000 128:19
\$35 42:9
\$5 42:14; 43:10
\$7 44:16
\$80 42:11
\$9 43:5, 9, 10

1

1 4:1; 50:18; 51:20; 55:2;
90:19; 95:13; 112:13
1,400 155:18
1,400-circuit 128:9
10 34:20; 54:21; 77:8, 15;
78:3; 91:8; 102:6; 105:6, 8;
107:11; 121:23; 123:4;
126:6; 184:23
10,000 161:23
100 29:12; 49:8; 157:12;
164:12; 209:10
100,000 148:21; 155:9,
17; 157:14, 15; 158:4, 5,
21; 159:9, 11
100-million-dollar
181:23
100-pair 156:19
100-square-foot 156:2,
7
1050 64:2, 3, 16
10:11 4:1
10th 5:3
11 63:9; 123:5; 126:7;
191:23
12 192:16
13 194:2
13th 4:9
14 209:11
14,000 132:1; 133:24
1400 130:2, 10; 131:20;
133:1, 4, 5, 8, 9, 10
1400-circuit 129:21;
130:8
15 49:17, 23; 134:11;
189:8; 213:10
15th 228:18
16th 5:23; 13:2; 114:22;
215:15
17th 5:9; 6:2; 7:20; 11:17
18 20:3
1997 13:2; 114:22;

118:11; 119:11
1998 4:1, 9; 91:19, 23;
94:14, 17, 20, 23
1999 16:12
19th 4:24
1AESS 140:5

2

2 5:22; 6:1, 4; 51:20;
54:21; 60:16; 71:12;
76:17, 19; 90:19; 92:16;
95:13; 121:24; 189:9
2,500 31:8
20 19:16, 19; 64:17;
114:1; 226:14
20's 227:2
20,000 131:18, 20; 148:7
20-something 41:23
20th 32:23
23 155:23
23-inch 128:17; 134:6
23-inch-wide 155:22
24 128:14; 205:20, 24;
206:6
25 17:8; 45:8; 130:16;
131:5; 161:21
25-square-foot 142:8
250-connection 128:6
251 9:1; 12:10
251(c)(3) 9:22
267 203:19
270 49:5
271 9:3; 11:18; 12:1, 10;
52:1, 12; 71:23; 72:5; 73:5,
20; 75:14, 22; 83:10; 85:6,
20; 86:24; 87:4, 7, 18;
88:4, 16; 89:11; 93:5, 12,
17; 111:16; 112:2; 113:7,
15; 114:7
29th 5:1
2ISX 16:9
2R 225:1

3

3 51:21; 61:23; 74:5;
76:12, 14, 16, 20, 21, 24;
77:8; 102:7
30 29:9; 114:1
36 128:13
3A 76:23

4

4 9:22; 38:5; 71:14; 74:5;
83:6; 87:11; 92:15
40 114:1; 183:19; 184:6,
19
40,000 34:5
4:45 228:22

5

5 45:6, 9; 48:22; 49:10, 14;
89:6, 16; 133:15, 16, 16;
146:17
50 155:23; 183:12, 13;
184:19
50,000 155:10
555 196:22, 23

6

6 94:5
6,000 155:10
600 183:10; 205:22
64114 214:13

7

7 45:2, 7; 100:18
70 29:12; 49:19

8

8 119:16
8140 214:13
89 49:23

9

9 78:3; 89:24; 91:16; 94:8,
12; 95:11; 98:5; 102:6;
117:11; 126:3, 4, 5;
149:10; 150:23
900 171:12
90s 152:3
911 8:7; 15:21; 118:8;
121:2
911's 25:21
96-98 27:18
9th 5:3; 117:6, 16

A

a.m 4:1
ability 81:19; 154:6;
187:14; 203:10; 204:3
able 22:14; 46:9; 54:4;
60:7; 88:8; 132:23;
144:18; 162:16; 175:2;
178:14; 181:1; 183:22;
184:1, 10; 188:1; 222:9;
223:12, 23; 224:14, 20;
225:23, 24
above 41:1; 131:5;
134:10
absent 74:5
absolutely 70:17
accept 160:7; 173:13, 18,
20, 21

accepted 12:13
access 7:19; 8:5, 6, 7, 7,
8; 9:20, 23; 13:12; 14:1;
22:19; 23:17, 18; 24:9, 14;
25:9, 9, 11; 31:21; 58:4,
19; 65:16; 81:16; 146:23;
151:4, 14, 24; 152:1;
155:17; 159:10; 178:2, 15;
179:4; 181:1; 182:9;
187:16, 18; 189:3; 219:22;
222:10; 225:24; 227:18
access/escorted 25:11
accessed 22:17; 144:12
accessible 172:15
accessing 144:8
accommodate 32:20;
33:4; 59:2; 161:23; 162:8,
10
accomplish 175:2; 184:7
account-management
104:16
accountability 25:15;
26:4; 58:6
accounting 148:2
accounts 147:23
accuracy 80:15, 18;
100:13
accurate 70:6; 74:6;
79:4; 88:23; 90:11;
103:22; 104:11; 105:14;
106:14; 113:7; 115:16;
131:7; 141:10; 147:16;
152:5, 19; 153:11; 169:20;
172:10; 173:22; 178:4;
180:10
achievable 177:18, 22
achieve 71:22; 83:10;
180:22; 207:17
achieved 73:3
acquires 147:23
acquisition 9:19
acronym 122:5, 6;
178:21
across 29:8; 139:10;
199:9
Act 7:24; 9:2, 2, 12; 10:4;
13:7, 18; 14:8; 20:2; 39:2,
19, 20; 68:24; 75:11, 21;
82:1; 174:16; 219:18;
221:10
acted 99:15
action 100:8, 14; 215:20
activates 170:2, 6
activating 21:19; 22:2
actively 16:7
activities 139:11; 178:13
activity 182:22
actual 30:18; 31:6; 139:4,
15, 16, 17; 192:14; 201:21;
208:4
actually 19:15; 24:8;
25:23; 30:1; 31:3; 32:14;
33:20; 34:5; 63:8; 64:24;
88:21; 91:6; 112:4;
114:24; 117:1; 129:17;
133:5; 137:19; 140:11;

169:18; 170:11; 181:5;
183:7; 184:7; 187:17, 18;
191:15; 207:12, 16; 208:6
ad 216:8
add 88:14; 96:5; 97:1, 13;
110:6; 152:15; 218:16, 21;
226:3
added 32:15; 108:7;
218:17
addition 8:10; 10:3;
12:18; 16:7; 23:6; 25:10;
55:10; 81:13; 160:2; 161:8
additional 15:16; 17:2;
18:22; 23:4; 28:14, 15;
33:5; 38:8; 54:16; 55:3, 4,
7; 59:2; 103:1; 104:19;
105:20; 193:5; 221:15;
222:7
address 20:12; 28:11;
30:13; 38:12; 109:3;
126:18; 159:9; 214:12;
219:11; 223:16; 224:18
addressed 22:22; 23:3;
71:19; 92:17; 93:14;
113:18; 150:7
addresses 105:15;
152:18; 223:11
adequately 226:15
adjourn 228:17
adjourned 228:19
administration 23:5;
170:21
administrative 164:16
adopt 215:17
adopted 219:8; 227:23
ads 216:5
advance 34:16
advanced 166:19
advancing 216:14
advantage 10:22; 18:9;
40:20
advantages 10:11
affect 216:9, 13; 217:10,
17
affected 32:18
affects 216:17
afternoon 35:22; 214:21
Again 15:12; 23:12; 37:5;
83:23; 90:8; 108:23;
116:2; 141:14; 147:6;
149:9; 156:12; 164:9;
173:23; 175:4, 18; 188:20;
224:15
against 226:7
aggregate 14:12
ago 29:23
agree 72:7; 77:10;
147:15; 199:15, 18; 202:7;
221:4
agreeable 68:5
agreed 4:12; 11:20;
52:10, 12, 17, 19, 23;
83:13; 99:8; 122:24
agreement 11:22, 23;
12:3, 8; 21:22; 51:3; 52:22;

53:1; 60:3, 4; 70:21; 73:12;
74:2; 75:5; 78:17; 79:3;
82:18, 19; 83:14, 20; 91:4;
93:18; 98:20; 113:22;
114:4; 120:14, 16, 17;
145:15
agreements 51:14;
198:11
ahead 42:22; 136:4;
148:15; 170:14
air 190:13
airport 214:23
Albert 5:14; 6:10, 16, 16;
7:6, 7; 11:9; 19:6, 10, 11;
24:2, 9, 22, 24; 25:6, 8;
37:21; 55:22; 56:1, 13;
57:1, 5, 19, 22; 58:3, 13;
16; 59:13, 16; 64:18, 23;
24; 121:9, 18, 22; 123:14;
124:10, 13, 22; 125:3, 7;
127:1, 3, 6, 19; 129:14;
132:17; 135:1, 3, 11, 21;
136:2, 12, 23; 137:5, 13,
15, 21; 138:1, 12, 15;
139:2; 140:3, 14, 19;
141:7, 11, 18, 19; 142:6,
14, 24; 145:10, 11, 17, 21;
146:5, 17; 147:3, 10, 20;
148:1, 6, 10, 20; 149:1, 5,
9, 11, 16; 150:1, 4, 14;
151:2, 9, 13, 24; 152:10;
153:3, 7, 11, 15, 24; 154:8,
11, 20, 24; 155:5, 8, 16,
21; 156:3, 6, 17; 157:5, 10,
18, 22; 158:7, 13, 16;
159:7; 160:4; 161:2, 9, 14,
19; 162:1, 12, 23; 163:4,
10, 13, 19; 164:23; 165:15,
23; 166:8; 167:14, 18;
168:7, 10, 18; 169:6, 15,
21; 170:16, 19, 23; 171:3;
172:1, 11, 16, 23; 173:3,
17, 23; 174:6, 10, 20;
175:3, 9, 14, 22; 176:3, 9,
15, 19; 177:5, 8, 14, 20,
24; 178:6, 18; 179:7;
180:2, 11, 19; 181:5;
182:4, 15; 183:3; 184:12,
15, 21; 185:7, 9, 19, 22;
186:14; 187:10, 13, 23;
188:18; 189:17; 193:2, 14;
194:12; 195:6, 9, 12, 23;
198:18; 199:17; 201:16;
203:17; 204:24; 206:8, 11,
22; 207:6, 8, 13, 20, 24;
208:8, 18, 22; 209:2, 5, 9,
18; 210:4; 211:7, 10, 14,
18; 212:13; 213:5
allegations 15:9
allocated 48:21
allow 14:16; 21:13; 35:19;
48:1; 160:23; 188:23;
208:15
allowed 54:8
allows 187:21
almost 44:15
along 5:6; 123:1
already-combined 9:19
alternative 18:12; 21:10;

23:15; 26:22; 27:2; 50:8;
141:12; 198:19, 23
alternatives 12:19; 13:5;
16:22; 20:14, 15, 19;
31:20; 140:16; 161:21;
165:24; 169:10
although 7:23; 107:3;
143:2
altogether 224:22
always 166:21; 185:9
amenable 67:16, 18
amendments 79:2, 5
American 135:3
among 72:13; 81:20;
83:15
amount 44:24; 59:7;
179:14; 183:23
amounts 96:16, 23
Amy 5:14; 6:9, 14, 24;
12:24; 53:8; 127:18;
150:7; 193:21
analog 8:11, 14; 130:15,
18, 21; 140:5; 161:23;
162:19; 225:1
analogous 165:20
analysis 190:24; 191:10;
211:8; 227:4, 10, 12
ancillary 18:18
and/or 85:2
angles 84:19
Annette 13:3
annual 211:12
answered 191:21
anticipation 180:8
anyplace 20:4
apart 169:19
apartment 28:24
apologize 78:14
Appeals 9:17
appear 5:16; 19:15;
124:5; 174:24; 186:9
appearing 189:22
appears 73:8, 9; 146:19;
148:11, 12, 12
appendices 114:2
Appendix 112:13
application 12:2; 52:1, 2,
13; 63:4; 64:1; 71:24; 72:6;
73:5, 20; 75:14, 22; 83:11;
85:5; 86:24; 87:4, 7; 88:16;
93:17; 111:17; 112:2;
113:7, 15; 114:7; 129:18,
19; 130:3; 142:24; 143:3;
212:17
applications 63:23
applied 200:12
apply 200:12; 205:5, 16
applying 45:12
appreciate 214:9; 228:15
approach 27:16; 67:15;
68:2; 147:7
approaching 221:10;
222:20
appropriate 4:14; 68:1;

85:8; 93:13; 202:20
appropriately 217:1
approval 71:23; 83:10;
89:13
approved 79:7, 9; 95:12;
106:8; 137:9, 10; 138:21
approves 95:7; 106:13
April 5:9; 6:1; 7:20; 11:17;
215:15
aptly 65:3
arbitrage 9:15, 17; 39:11,
23; 40:5, 7; 41:18; 42:2;
47:16, 24; 48:8, 11; 60:22;
61:20; 108:20; 109:7, 8,
17; 110:4, 11; 219:11, 21;
220:12, 24; 222:18
arbitration 7:17; 51:17;
84:6; 85:13, 14; 93:4;
109:4, 6
arbitrations 4:4; 20:8;
51:23
area 44:18; 45:14, 19, 20;
63:24; 92:4; 129:13;
171:10; 189:18; 190:9;
196:18; 200:18; 203:11
area-code 200:4, 13, 24;
202:2, 22
areas 50:6; 200:8
arena 130:24
argument 216:16
arguments 215:13
arithmetic 131:20
around 29:17; 30:4; 45:2;
117:2; 134:9; 152:2;
155:9; 179:4; 181:3; 215:7
arrange 35:24
arrangement 20:22;
22:16; 26:13, 21, 23;
27:13, 19; 54:13, 14, 17;
56:6; 57:2, 8, 13; 58:9, 10,
24; 75:19; 108:18; 110:14;
111:19; 115:8; 118:4;
133:22; 134:24; 135:6, 9,
24; 146:20; 160:14, 19;
164:21; 165:12; 195:1;
197:24; 199:12; 209:20;
210:2
arrangements 13:10;
20:6; 22:16; 31:11, 18;
34:8; 76:6; 92:6; 93:8;
137:1; 163:21; 164:8, 12,
16; 165:16; 183:16;
189:24; 201:23; 208:11;
209:13
arrangments 11:19
arrived 96:23
article 89:4
artificial 10:10
aside 62:11; 161:4
aspect 26:13; 28:12;
32:12; 33:15
assemble 12:16; 15:13
assembly 8:22; 18:17;
26:17; 32:4; 50:5; 58:8, 23;
163:14, 22; 164:4, 14, 19;
165:20; 187:21; 189:10;

15, 20, 22; 209:22; 213:12;
218:19
assembly-room 18:11;
26:12; 165:12; 187:20;
189:8
assertion 80:15
assign 203:10
assigned 194:23;
196:16, 23; 197:14, 15, 18;
198:14; 200:15; 203:7, 7
assigning 201:8, 9
assignment 185:13
assigns 201:2
assist 53:16
assistance 15:21
associated 17:11; 97:7;
103:15; 133:15, 16;
171:18; 196:17; 197:6;
202:13, 24; 203:14, 15
assume 94:7, 19; 158:18;
167:6, 16; 227:15
assumed 185:16; 198:8
assuming 103:11;
108:19; 112:11
assumption 106:9
assurance 72:22
AT&T 4:5; 11:17; 21:10,
22; 30:8; 31:16; 50:24;
76:11, 15, 24; 77:8;
159:17, 17, 22; 161:3;
220:14; 228:19
AT&T-3 89:18
Atlantic 4:4, 21, 24; 5:1,
2, 7, 9, 21, 21; 6:1, 4, 23;
7:15; 8:15; 14:17; 15:7, 15,
18; 16:21; 18:2, 11, 17, 23;
19:20; 23:22, 23; 24:20;
25:4, 5, 14; 26:4; 27:3, 9;
28:3; 33:9, 21; 34:6; 36:9;
41:24; 46:7; 54:21; 55:24;
65:7, 10, 19; 66:18; 67:4;
68:21; 69:21, 23; 70:5, 24;
71:10, 11, 18; 72:5, 7, 22;
73:3, 14, 20; 74:2, 11;
75:15, 23; 76:2, 10; 77:11,
17, 23; 78:18; 79:6; 80:7,
9, 12, 16, 24; 81:2, 13, 21;
82:21; 84:21; 85:21; 86:1;
87:1, 3, 14; 88:15; 89:23;
91:9; 92:6, 14, 24; 95:19,
22; 97:24; 98:16; 99:9;
100:6, 12, 21; 103:6, 13,
19; 104:10, 15, 17; 105:3,
12, 18; 106:3, 12, 18;
107:16; 108:12, 19;
109:14; 110:15, 19; 111:8,
11, 19; 112:6, 9, 12, 14,
17; 113:4, 11, 24; 114:5;
116:14, 17, 23; 117:1, 12,
13; 118:11, 15, 19, 22;
119:9; 121:7, 7, 23;
122:23, 24; 123:17, 22;
124:23; 125:4, 10; 126:23;
128:1, 8; 129:6, 15;
132:10; 134:15, 19, 21, 22;
135:4, 8, 10, 15; 136:9, 14;
137:2, 8, 16, 19, 23; 138:6,
8, 10, 13, 20, 21, 23, 24;

139:9, 21, 21; 140:2, 13,
15, 19; 141:17; 143:6, 12,
14; 145:13, 16; 146:18, 22;
147:7, 9, 17, 22; 151:6;
152:6, 20; 154:9, 12, 16;
155:12; 156:10, 13, 24;
157:14, 21; 158:20, 21;
159:2, 16, 20; 160:9;
161:4; 162:24; 163:8, 17,
24; 165:3; 166:2, 5, 15;
167:1, 4, 8, 9, 13, 21, 24,
24; 168:8, 11, 14, 16, 21;
169:1, 6; 172:21; 176:23;
177:2; 178:1; 180:6, 13;
181:21; 183:1; 184:13, 18;
185:4, 16; 186:13, 16, 18;
187:2, 8; 192:5, 13; 195:5,
11, 12; 198:22; 200:9, 20;
201:11; 202:17; 204:21;
209:14; 212:11; 215:9, 11;
216:14, 21, 24; 218:4, 10,
10, 23; 219:4, 12, 24;
220:3, 9, 23; 223:10, 19;
224:12; 227:16, 21; 228:6
Atlantic's 15:4, 23;
16:19; 24:11, 13, 13;
25:18, 19; 58:12, 13, 20;
61:20; 68:12; 89:9; 93:16;
102:8; 104:21; 109:16;
111:16; 112:19; 113:2;
115:22; 116:5; 132:14, 17;
134:16, 22; 136:13;
138:16, 24; 140:10;
165:17, 18; 166:1; 169:2;
171:1; 195:9; 199:4;
211:19; 215:5; 217:15, 18,
24; 218:2, 15; 220:5;
223:11
Atlantic-approved
137:11
Atlantic/NYNEX 119:24
attach 176:7
attached 11:17; 51:1;
175:1, 16
attempt 167:15
attempted 116:11
attempting 181:23
attention 77:7
attractive 190:7
August 91:18; 94:9, 14,
17, 20, 23
authority 105:19;
215:11, 17
authorization 87:18;
88:4; 89:11
authorized 72:10
automated 62:23; 166:14
availability 91:17
available 5:12; 9:4; 16:1;
36:11, 23; 53:21; 62:21;
63:1; 76:3; 78:7, 9, 10, 11;
79:14; 81:6; 92:7; 95:1, 4;
102:17; 118:14, 17, 19, 20;
172:9, 14
Avenue 159:16
avenues 51:23
average 34:18; 42:7, 9,
10, 13, 15, 16; 43:17, 20;

45:1, 8, 22; 46:3; 155:10
avoid 10:10
avoided-cost 40:15
aware 73:11; 74:18, 19;
104:4; 112:16, 21; 114:8;
124:19, 22, 24; 125:8;
141:12; 153:1; 204:5;
208:1; 225:15
awareness 216:4
away 64:8

B

B 195:20; 196:15; 199:6;
202:19
BA 13:5, 18; 14:8, 10, 15;
54:21; 60:23; 92:16;
121:24; 189:9; 192:4
BA's 13:10, 17; 14:7, 23;
15:1, 10
BA-Mass 8:8; 10:16, 22;
12:17
BA-Mass's 9:11; 10:14;
12:12
BA-Massachusetts's
13:8
back 4:12, 13; 14:14;
49:23; 56:17; 59:24; 65:5;
74:8; 81:11; 82:6; 83:5;
89:18; 93:22; 105:6;
110:12; 114:18; 127:15,
16; 134:12; 145:8; 148:19,
20, 21; 156:12, 16; 157:14,
17; 158:5; 159:21; 161:1;
162:17, 21; 165:11; 170:9;
186:5; 194:24; 197:21;
199:23; 201:13; 208:3;
217:9; 218:9; 224:21
background 20:11
backup 190:24
bad 90:13
bag 156:8
balance 12:3
ballparking 43:6
Baltimore 201:20
band 121:10
bandwidth 206:12, 13;
208:15
Barbulescu 122:16, 19,
21; 126:16; 127:7; 143:22,
24; 144:3; 190:16, 18, 22
Barbulescu's 191:18
barrier 218:12
base 31:7
Based 4:13; 47:6; 216:17;
221:13; 222:6, 6; 225:17;
227:2, 6
baseline 43:23
bases 55:2
basic 35:9; 42:10; 162:3;
197:16; 213:7
basically 19:12; 21:18;
28:16; 31:20, 23; 33:6;
34:7, 13; 36:1; 40:17;
47:10; 53:22; 60:12;

120:18; 164:6, 15; 175:7;
216:5
basics 194:24
basis 39:4; 42:12; 45:2, 4,
10; 46:2, 17; 49:11; 54:23;
67:8; 80:14; 82:24; 97:3,
16; 98:12; 117:15; 129:5;
156:12; 166:6; 168:4, 15,
20; 169:4; 182:4; 185:5,
21; 202:4; 219:15, 15;
221:22
battery 66:7, 7, 14;
189:12; 190:3
battleship 164:11
bay 18:18; 66:14
BDFB 66:14, 18
bear 183:5; 217:8
Beausejour 5:7, 8; 6:3, 6;
7:10; 12:22; 19:6; 36:8, 21;
37:1; 69:3; 74:7; 83:2;
88:5; 92:3, 13; 93:2; 96:9;
99:24; 119:1, 5; 126:14,
17; 145:3, 5; 213:20;
226:19, 22; 228:9
become 76:23; 103:1, 3
becomes 47:6; 226:1
began 26:11
begin 91:14; 110:24;
214:10; 215:2, 22; 223:16
beginning 24:5; 91:24;
115:6; 124:16; 149:10;
191:6
begins 19:7; 224:18
begun 54:6
behalf 13:4; 24:17
behind 15:5, 16; 47:8;
48:5; 50:15; 60:10
believes 8:23; 10:4
Bell 4:4, 20, 24, 24; 5:2, 7,
9, 20, 21; 6:1, 4, 22; 7:15;
8:15; 14:17; 15:4, 7, 15,
18, 23; 16:19, 21; 18:2, 11,
16, 23; 19:20; 23:22, 23;
24:11, 13, 13, 19; 25:3, 4,
14, 18, 18; 26:4; 27:2, 9;
28:3; 33:9, 21; 34:6; 36:9;
41:24; 46:7; 54:21; 55:24;
58:11, 13, 20; 61:19; 63:5;
65:7, 10, 19; 66:17; 67:4;
68:12, 21; 69:21, 23; 70:5,
24; 71:10, 11, 18; 72:5, 6,
22; 73:3, 14, 20; 74:2, 10;
75:14, 23; 76:2, 10; 77:10,
17, 23; 78:18; 79:6; 80:7,
9, 11, 16, 24; 81:2, 13, 21;
82:21; 84:21; 85:21; 86:1;
87:1, 3, 14; 88:14; 89:8,
22; 91:9; 92:6, 14, 24;
93:16; 95:19, 21; 97:23;
98:16; 99:9; 100:5, 12, 21;
102:8; 103:6, 13, 19;
104:10, 15, 17, 21; 105:3,
12, 18; 106:3, 12, 17;
107:15; 108:12, 18;
109:14, 16; 110:15, 19;
111:8, 11, 16, 19; 112:6, 9,
11, 14, 16, 19; 113:2, 4,
11, 24; 114:5; 115:22;

116:5, 14, 17, 23; 117:1,
12, 13; 118:11, 14, 19, 22;
119:9, 24; 121:7, 7, 23;
122:23, 24; 123:17, 21;
124:22; 125:4, 10; 126:23;
128:1, 8; 129:6, 15;
132:10, 14, 17; 134:15, 16,
19, 20, 22, 22; 135:4, 8,
10, 15; 136:8, 13, 14;
137:2, 8, 11, 15, 19, 23;
138:5, 8, 10, 13, 16, 20,
21, 23, 24; 139:9, 21, 21;
140:1, 10, 13, 15, 19;
141:17; 143:6, 12, 14;
145:13, 16; 146:17, 22;
147:7, 9, 17, 22; 151:6;
152:6, 20; 154:9, 12, 16;
155:12; 156:10, 13, 24;
157:13, 21; 158:20, 21;
159:2, 16, 19; 160:9;
161:4; 162:24; 163:8, 16,
24; 165:2, 17, 18, 24;
166:2, 5, 15; 167:1, 4, 8, 9,
13, 21, 24, 24; 168:8, 11,
13, 16, 21, 24; 169:2, 6;
171:1; 172:21; 176:23;
177:2; 178:1; 180:6, 13;
181:21; 183:1; 184:13, 18;
185:4, 16; 186:12, 16, 18;
187:2, 8; 192:5, 13; 195:5,
9, 11, 12; 198:22; 199:4;
200:9, 20; 201:11; 202:17;
204:21; 209:14; 211:19;
212:11; 215:5, 9, 11;
216:13, 21, 24; 217:15, 18,
24; 218:2, 4, 9, 10, 15, 22;
219:4, 12, 24; 220:3, 4, 9,
23; 223:9, 11, 19; 224:12;
227:16, 21; 228:6
Bellcore 63:12, 15;
124:15; 178:22; 212:2
below 112:13
Bench 36:24; 186:2
benefit 218:21
besides 59:4; 148:8
best 30:16; 51:6; 52:24;
75:4; 150:7; 151:22; 198:5
better 21:5; 24:7; 58:24;
189:1; 220:17
beyond 13:6, 17; 14:8;
44:18; 45:14; 71:1, 7; 76:1;
82:16; 85:17; 92:4;
111:22; 112:18; 118:6, 8;
149:7; 166:7
big 50:6; 128:11; 129:23;
137:21; 140:20; 155:9;
156:4; 179:20; 180:5;
221:23
bigger 128:20; 133:5
biggest 155:8
bill 222:10; 225:23
billed 220:11
billing 23:11; 46:9;
103:17; 171:15; 181:10;
198:3; 226:7
billing's 198:6
bit 24:7; 51:2; 59:11;
62:19; 80:10; 83:4; 89:20;

110:13; 160:5; 163:21
Blacksburg 19:18
block 162:5, 5; 164:9
blockage 206:21, 23
blocking 171:11
blocks 26:7, 7; 58:20;
59:9; 162:3; 165:1; 190:5,
10
blow 212:5
blunt 48:18
books 148:4, 7, 11, 13
Borrowing 216:10
Boston 43:9, 22; 44:14;
88:20, 22; 131:16; 154:17;
220:1
both 27:11; 49:11; 55:8;
91:16; 94:19, 20; 109:20;
163:11; 191:21; 218:22
bottom 33:8; 123:4
bought 64:24
bounds 85:18
boy 184:9
break 59:22; 114:12;
185:23
BRI 78:10; 90:4; 91:17;
96:19; 101:3, 8; 162:20
brief 5:19; 19:8, 23;
214:5, 22
briefly 20:10; 33:20;
88:18; 114:16; 228:21
bring 14:14; 201:6
bringing 198:16
broad 139:3; 151:17
broader 93:10; 126:20
Brooks 4:5
brought 36:15; 203:6;
206:5
Brown 5:14; 6:9, 13, 13,
21, 22; 7:11, 13, 14; 37:11,
20; 38:16, 21; 40:8; 41:2,
4, 21; 42:4, 17, 19, 23;
43:3, 15; 44:12; 45:14, 21;
46:22; 47:13; 48:4, 14;
49:5, 17; 50:22; 51:6;
52:19, 23; 53:8; 60:2, 6, 9,
14; 61:1, 7, 22; 62:4, 14;
65:5; 66:17; 67:12, 17;
68:4, 11, 15; 69:5, 11, 16;
70:1, 8, 12, 19; 71:5, 15,
24; 72:1, 9; 73:1, 7, 16, 22;
74:14; 75:9, 16; 76:1, 5;
77:9, 14; 82:8, 16; 83:19;
85:4, 23; 86:10, 23; 87:2,
8, 19; 88:1, 10, 18, 24;
89:3, 19; 90:12, 15; 96:5,
10, 13, 21; 97:1, 14, 15,
19; 98:14, 18; 99:5, 12, 20;
101:1, 14, 23; 102:2;
108:17, 22; 109:8, 11, 13,
18; 110:24; 111:3, 20;
112:21; 113:1, 9, 16;
114:8; 127:18; 142:19, 21;
145:9, 18; 146:1, 7, 12;
150:6; 151:18; 152:15;
153:1; 154:19; 190:19, 23;
191:2, 11, 14, 20; 192:7,
10; 193:8, 18; 194:10, 22;

195:7, 19; 196:12; 197:5,
12; 198:5; 199:15, 18;
200:1, 5, 23; 202:6, 8;
203:4, 15, 18; 204:5, 15,
23; 205:13, 17, 19; 206:4,
10; 207:7, 22; 210:15, 17,
19, 23; 211:2
brushing 35:10
Bryan 5:14; 6:10, 15; 7:3
buck 148:4; 159:20
bucks 180:5
build 124:17
building 28:24; 29:2;
32:22; 188:11
builds 121:4
built 160:22
bunch 157:6
bundling 81:24
bus 90:17
business 34:22; 35:18;
36:4; 78:12; 90:7, 10, 22;
115:18; 226:12
businesses 183:21
buy 17:2; 57:9; 80:23;
136:1, 140:3; 153:17;
159:1, 19; 160:9; 188:5, 5;
205:10; 206:15, 16;
212:20; 217:18; 221:7, 7,
17; 222:5, 20, 21; 225:3
buying 57:12; 64:20, 22;
212:24; 219:20; 221:1, 3,
16; 222:5, 9, 12, 15;
225:18; 226:4, 4
buys 18:1; 159:16;
221:20
by-customer 43:4

C

C 170:22; 197:12, 20;
199:7; 203:13, 14
C&P 19:19
cable 15:5; 144:11;
157:6; 162:13, 14; 189:13;
209:19; 210:10
cables 32:13, 18; 33:2, 5;
156:19, 23; 157:11, 22;
165:20, 21; 186:16, 21;
187:3, 14, 16; 190:5;
209:16, 16, 18; 210:3
cabling 163:20; 164:8,
12; 209:20
cage 18:14; 50:4, 7;
66:24; 132:13; 142:18;
156:2, 7; 163:8, 9, 12;
165:22; 189:16, 17;
198:16; 201:7, 14; 209:22
cageless 58:9
cages 8:22; 26:19; 50:10;
143:4; 182:23
calculate 46:2; 55:15
calculating 61:5
calculation 49:7; 50:15;
60:12; 66:23
calculations 60:10

California 224:5; 225:10
call 5:24; 9:2; 29:7, 8, 9, 10, 11; 42:14; 55:11; 61:11; 66:3, 15; 76:15, 21; 120:19, 19, 22, 22; 122:10; 130:8; 131:6; 164:24; 184:22; 195:14, 19, 21; 196:4, 5, 11, 13, 20; 197:1, 3, 7, 8, 19; 198:1, 2, 4, 8; 199:5, 10, 11, 16, 22; 200:5, 10, 21; 202:16
call-forwarding 44:20
call-waiting 44:20; 171:7; 178:10
called 51:20; 79:16; 118:23; 119:10; 129:24; 162:5; 178:21; 199:9; 210:7
calling 44:18; 45:13, 19, 20; 120:8; 130:2; 171:8, 8, 9, 10; 178:10; 200:8; 202:15, 17
calls 29:13; 43:12; 69:4; 120:19; 136:16; 194:18, 21; 200:16, 19; 201:24; 202:4, 5, 13, 18; 203:1, 2, 2, 7; 204:13; 208:16
came 111:19; 114:3
campaign 216:4, 8
can 10:15; 14:12; 17:23; 21:8; 22:17; 30:16; 40:4, 20; 41:14; 45:4; 48:6, 6; 50:12; 51:7; 53:5; 56:13; 59:11; 62:11; 63:24; 64:9; 74:2; 77:10; 78:2; 80:23; 82:12, 16; 83:19; 86:8; 87:13, 21; 88:18; 92:7; 93:21; 96:16, 23; 97:13; 18:99:2, 6, 19; 109:19; 111:4; 117:9; 121:7, 9, 12; 122:10, 14; 129:22; 130:7, 8, 17; 137:6, 9; 141:20, 22; 145:23; 146:10, 14; 151:22; 161:23; 165:1, 2, 7, 7; 168:1; 173:13, 14; 174:7, 16, 20, 24; 175:17; 176:7, 13, 16; 177:17; 178:13; 179:4, 8, 16, 18; 183:19; 184:18; 185:4; 188:5, 6, 19; 189:2; 191:19; 193:10, 11; 198:16; 201:23; 203:15, 21, 21; 206:5, 14, 16; 207:17; 213:10; 214:6, 22; 220:1, 2, 17; 227:19
capabilities 21:12; 22:19; 132:11, 21
capability 161:16; 169:23, 24; 170:2; 177:11; 179:1, 9
capable 176:4
capacity 59:13; 128:9; 129:21; 130:11; 131:18, 22; 132:1; 133:1, 24; 154:18; 155:1, 4; 162:15; 175:6; 205:10, 15, 20
capital 148:12
captured 193:16

car 21:24
card 140:24
care 10:8; 23:10; 137:2; 191:18
career 20:3
careful 9:21
CARLSON 213:23; 214:3, 11; 226:23
carried 148:3, 13
carrier 105:20; 120:23; 127:4; 171:16; 221:21
carriers 12:4; 15:19, 19; 40:1; 47:3, 18; 81:15, 18; 180:24
carry 196:1; 198:24
carrying 175:20; 198:22
case 9:14; 29:3; 31:11; 51:13, 21; 52:22; 57:3, 16; 59:16; 74:1; 77:22; 84:21; 119:12; 140:6; 148:5; 200:10, 14, 24; 208:9
cases 26:2; 51:15, 19; 62:4, 6; 183:3; 201:19
catalogue 90:20
catch 214:23
categories 151:16
cause 30:15, 18; 103:3; 218:9
caused 26:5, 5
CCRS 22:24; 23:8; 178:22; 181:7
Celtics 214:22
Center 170:23; 195:15, 17, 20; 196:6, 7, 10; 197:9, 11, 12, 18, 19, 20; 199:3, 4, 6, 7, 10, 12, 13, 14; 200:19; 202:4, 5, 9, 23, 24; 203:3, 12, 13, 14; 204:12, 22
centering 23:2
centers 200:16; 203:19; 204:4
central 8:15; 14:13; 18:24; 19:2; 24:1, 13; 30:10; 31:24; 32:16; 33:2; 56:11, 12; 57:18, 21; 65:7; 66:10; 67:5; 78:3; 102:9, 23; 103:4; 116:10; 134:2, 19; 136:13; 138:5, 24; 139:12; 140:13; 141:8, 17; 143:6; 144:12; 145:14; 146:22; 147:1; 154:15, 17; 155:1, 3, 13; 158:9; 159:10, 12, 16; 162:4; 164:10; 167:5; 169:19; 182:22; 186:7; 187:1, 11, 15; 194:13, 15, 19; 195:9, 11, 12; 209:20; 211:23
central-office 65:8; 132:14; 136:5; 137:14, 16, 20; 138:9, 17; 140:2
Centrex 21:14; 22:6, 15, 17; 23:1; 34:23; 78:12; 101:18; 178:2, 8; 179:2, 4, 5
Centrexes 34:24

cents 45:3, 6, 8, 9; 49:19, 23
CEO 86:6
certain 8:2; 12:18; 38:19, 24; 52:10; 53:17; 78:8; 87:5; 90:3; 113:3; 178:4
certainly 44:9; 52:24; 67:17; 72:11, 16; 75:3, 5, 9; 82:9; 101:15; 109:2; 132:22; 144:22; 145:19; 193:5; 201:7
cetera 15:21; 17:3; 118:9; 121:4
Chair 100:11, 11; 111:12
chairman 52:18, 19; 74:20; 98:24; 99:1, 15, 18; 100:10; 112:10
challenge 22:18; 216:15; 227:24
challenges 22:3
change 6:19; 21:12; 60:23; 61:1; 103:12; 136:17; 140:22; 160:8; 171:19; 172:23, 24; 173:4, 13, 14; 174:12; 177:10, 13, 22; 178:3, 10, 13; 186:12; 197:24; 198:3
changed 108:4, 5; 158:24
changes 21:15; 22:1, 6; 63:22; 103:16; 179:2; 182:2, 8; 183:21
changing 166:18, 18, 19; 168:11, 13; 187:8
characteristics 45:22; 144:21
characterization 113:8; 119:22
charge 44:8, 10; 54:23, 24; 55:1, 12, 19; 61:3, 5; 66:18, 21; 67:4; 76:4; 90:22, 23; 95:19, 19, 23; 104:7, 9; 105:20, 24; 106:4, 12, 14; 109:10, 15; 118:22; 119:14; 210:2; 223:14; 224:16
charged 75:13; 202:21
charges 46:18, 18, 18; 60:4, 17, 21; 90:8; 103:20; 197:17; 200:8, 9, 12; 218:18; 222:3; 226:3
chart 90:15, 18; 95:10
chassis 130:1, 10
cheap 23:14; 64:18, 22
cheaper 160:17; 190:15
cheapest 42:17, 21
cheat 220:15
checks 172:5
chief 85:19
children 216:9
chip 53:8
choice 200:8
choices 37:19
choose 15:1, 3; 16:20; 40:12; 141:15; 200:7
chooses 13:15; 14:5;

15:9; 103:10
chose 49:13; 80:3; 122:8; 168:23; 193:2; 194:10; 201:5
chosen 37:14, 16; 38:24; 39:20
churn 226:16
Circuit 9:16; 28:19, 19, 21; 107:22; 130:11; 133:15, 16, 16; 136:17; 144:21; 166:9; 183:7, 10
circuit-by-circuit 156:11
circuits 35:1; 56:17; 64:3, 16; 129:22; 130:13, 17; 131:3; 133:9; 157:15; 188:1
circumstance 92:2; 103:10; 169:3
circumstances 42:1; 70:4; 139:24
cite 101:16
cited 132:10
City 78:4; 102:10; 214:13; 216:2, 5
claimed 10:20
claiming 17:22
claims 9:9; 10:12; 11:7; 16:13, 16; 18:21; 180:17
clarify 83:20
class 10:11; 166:18; 171:12
classes 61:14; 62:7
clear 9:14; 59:19; 67:22; 68:20; 80:13; 86:13; 98:21; 120:7; 147:4; 174:4; 205:3
clearance 134:9, 13
clearer 167:1
clearly 47:14; 60:20; 68:15; 69:4, 5; 156:8; 200:11; 215:14
CLEC 8:13; 11:4; 12:15, 17; 13:11; 14:1, 12, 16; 15:9, 12, 16; 16:2; 17:22; 18:1, 4, 7, 13; 26:10; 30:22; 31:21, 23; 33:19, 22; 34:10; 35:20; 37:24; 41:13; 45:17, 24; 46:15; 50:13; 54:1, 6, 6; 56:14; 59:6; 65:13; 66:1, 2; 67:4; 72:23; 73:13; 74:3; 79:17; 80:3, 8, 21; 102:24; 103:7, 11, 11, 14; 104:14, 17; 115:14, 18, 24; 116:3, 6, 9, 20; 117:23; 118:1, 14; 131:17, 24; 132:21; 133:10, 15, 24; 134:17; 135:6, 10, 19, 22; 136:1, 2, 10, 16; 137:9; 140:20, 23; 141:3, 3, 4; 143:2; 146:20; 147:5, 11, 16; 148:17; 153:5, 13, 16, 22; 154:1, 6, 14; 155:11; 157:13; 158:22; 159:2; 160:10, 13, 16, 21; 161:11, 15, 18; 162:11; 163:7, 9, 16, 22; 165:1; 166:2, 5; 168:22,

23; 169:3; 179:11; 186:13, 14, 21, 24; 187:9, 23; 188:10, 23; 192:4, 23; 194:6, 23; 195:23; 196:3, 24; 197:13; 198:19, 21; 199:16, 22; 200:5, 6, 6, 7; 201:2, 5, 7, 11, 17; 202:15, 16, 22; 203:6, 12, 21; 204:2, 6, 10; 205:9; 206:14; 217:18; 219:13; 221:11, 20; 222:2; 227:17
CLEC's 13:12; 14:2, 15; 18:2; 58:10; 132:13; 144:14; 196:9; 197:6, 10; 198:8, 9, 16, 17; 203:10, 10; 204:2; 207:2; 218:8
CLEC-provided 154:13
CLEC-specific 130:3
CLEC-to-subscriber 133:13
CLECs 4:23; 7:24; 8:20; 10:13, 15, 20; 11:6, 12; 12:6, 20; 13:5; 14:20, 24; 15:3, 18; 20:22; 21:3; 22:12; 24:17, 21; 25:16, 21; 26:14, 17; 28:1; 35:3; 36:13; 37:17, 23; 38:13; 39:19; 40:9; 46:13; 52:21; 53:16; 59:1, 2; 73:11; 74:3; 77:19; 80:23; 81:6; 91:12, 18; 92:7; 102:10, 23; 103:1; 107:17; 115:9, 10; 117:22; 123:22; 135:17; 140:12; 160:7; 163:11, 17; 164:7; 169:10; 182:8, 10, 17; 187:21; 188:7, 12; 189:19; 192:8, 12; 200:14; 201:20; 202:3; 204:20; 215:5, 12; 216:14, 22, 24; 218:4, 7, 23; 219:5, 20; 225:8, 21; 226:17
client 7:4
clog 58:21
close 77:20; 81:23; 82:5; 95:24; 112:15; 228:21
closer 26:9, 15
closes 55:12
CO 65:12; 66:1; 154:21; 212:9
cocarrrier 7:7
code 201:10; 203:7, 11
codes 166:19; 201:8; 202:3, 24; 204:3, 11, 13
collaborative 51:9; 67:15
collect 56:15; 222:10
collected 56:20; 194:13, 15
collection 74:3
collocate 8:14; 12:17; 15:6; 48:18; 49:7; 116:10; 136:19; 198:21; 212:22
collocated 102:10, 24; 103:2; 137:6, 7; 141:2; 157:23, 24; 160:12; 165:9, 10; 209:23
collocating 14:14; 56:16;

163:12 collocation 8:19, 22; 13:14, 15, 73; 14:3, 4, 24; 15:24; 18:13; 20:6, 24; 26:18; 27:22; 32:6, 14; 33:6, 18; 34:3, 10; 48:16; 23; 50:4, 8; 56:17; 58:8, 10; 63:20; 66:24; 67:1; 78:4; 81:23; 106:19, 20; 107:1, 4, 7, 17, 23; 108:6, 10, 15; 115:8; 116:19, 19; 117:24; 132:11, 13; 133:22; 135:16, 18; 137:22; 141:7, 8, 10; 147:1, 10, 19, 21; 148:18; 155:13; 156:2; 157:20; 163:7, 8, 18; 164:19, 24; 165:6, 14, 21; 182:23; 189:11, 16, 17; 190:9; 192:24; 194:9, 20; 195:16, 22; 196:8; 199:6, 12; 201:7, 14; 209:15, 19, 22; 210:14; 212:12, 22 collocation-cage 50:6 collocation-type 118:4 combination 9:7; 21:8; 26:24; 32:5; 33:18; 47:12; 48:2; 54:23, 24; 55:1, 4, 8; 57:24; 68:14, 22; 71:3, 4; 80:2, 21; 95:19; 105:23; 118:12, 22; 119:14; 120:4; 160:11; 192:9, 14; 193:12; 215:9, 21; 216:1, 1; 217:1; 222:21; 223:4, 7; 228:3 combinations 4:11; 6:1, 4; 8:3, 16; 9:18; 12:14; 31:21; 32:13; 34:9; 35:12; 38:19, 20; 47:9; 48:13; 50:18; 53:20; 54:8, 21; 60:16, 21, 24; 61:10, 12, 13; 69:1; 70:6; 71:12; 76:11, 16, 24; 77:8; 79:18; 89:16; 90:7; 95:22; 97:21, 22; 105:13; 106:11, 19; 113:3, 4; 123:1; 126:8; 150:23; 157:21, 23; 183:6, 10; 184:2, 23; 189:9; 190:2, 20; 191:12; 228:7 combine 7:24; 8:11, 20; 10:15; 11:13; 12:20; 14:11; 15:15; 18:10; 27:4, 5, 5; 28:2, 9; 33:19; 41:3; 56:1; 59:3; 80:8; 81:19; 92:8; 117:23; 118:2; 144:18, 22; 154:2, 6, 12; 188:1; 215:11; 216:21, 22; 219:4; 223:12; 227:16, 19, 22 combined 8:12; 10:18; 23:16; 39:18; 54:12; 69:22; 80:8; 117:15; 215:4, 7; 223:19 combines 27:3; 123:22; 166:22 combining 13:5, 19; 14:9; 21:17; 50:11; 116:13; 144:8, 19; 149:12; 153:5, 13, 18, 22; 154:1; 165:2, 5; 166:9; 224:16	Combo 5:21; 87:11; 92:16; 102:7; 121:24 coming 24:24; 59:7; 63:1; 84:19; 156:15; 197:19; 198:8, 9; 200:6; 205:11, 15, 24; 206:1; 213:22; 228:15 commence 91:17 commencement 102:12, 22, 24; 103:2 comment 13:3 commented 99:8 comments 11:16; 35:3; 39:13; 211:1; 213:11 commercially 62:21 Commission 12:1; 52:11, 17, 18; 72:24; 73:4, 21; 74:6, 12, 13; 77:20; 79:7; 81:4, 8, 15; 83:16; 85:8; 87:5; 91:10, 20, 23; 94:16, 21; 95:7, 12; 98:17; 99:1, 2, 7, 11, 15, 18; 100:15; 106:7, 13; 110:16, 20; 111:10, 13, 15; 112:5, 7, 11, 17; 113:6, 15; 114:5, 6 commission's 51:24; 98:22; 100:7 Commissioner 4:17; 74:22; 222:23; 223:2 commissioner's 74:17 commit 72:18; 82:22 commitment 72:4; 73:4, 19; 74:5, 10, 11; 83:1; 100:22; 101:5, 10; 105:11; 106:10; 108:12, 14; 111:12; 112:16, 18; 113:6, 14; 114:4; 120:2, 11, 24; 121:2, 3; 123:9, 12; 126:5, 11 commitments 89:22; 101:7; 110:15; 111:9, 13 commits 106:18 committed 11:24; 110:19 common 25:19; 134:7; 188:13; 190:9 Communications 214:12 compact 156:3 companies 63:3; 120:2, 2; 124:20; 143:9; 144:16 company 6:2, 19; 7:23; 8:3, 10, 16, 18, 23; 9:6; 10:4; 11:19, 23; 12:8, 19; 24:10, 15; 36:12; 37:13; 38:1; 46:19; 48:1, 3; 51:11; 52:10; 63:5; 65:20; 67:16, 17; 69:13; 72:18; 83:6, 17; 86:7, 21, 22; 104:13; 125:22, 23; 136:22; 145:13; 193:6; 210:12, 21; 211:8; 214:12 company's 7:19, 21; 11:5, 11, 12; 37:11, 18; 38:18; 52:12; 60:19; 66:24; 69:8; 83:5; 87:19; 97:6; 125:1; 211:1, 4;	213:11 comparative 152:16 compared 31:2; 32:23; 150:3; 190:8 comparing 40:7 comparisons 208:19; 209:1, 8 compelled 8:1 compensate 216:24 compensation 200:10; 222:13 compete 155:11 competing 81:15, 18; 151:20, 23 competition 8:17; 10:6; 13:6; 14:22; 20:8; 53:14; 151:7, 10, 19; 152:6, 16; 217:6, 13; 218:13 competitive 151:13, 24; 152:21, 23 competitor 10:11; 75:23 competitors 151:11; 152:12 complete 29:9; 65:23; 87:17; 96:14; 166:3; 168:4; 185:4 completed 21:1; 63:15, 16; 158:2; 159:22 completely 20:20; 21:1; 166:6 complex 17:6, 17; 18:24; 71:9 complexities 17:10; 182:6 compliance 63:12 complicated 31:17 comply 39:2 components 117:10; 120:8; 210:10 comprehensive 7:22; 11:22; 38:11; 50:23; 71:21; 83:8; 84:23; 86:2; 92:19; 113:17, 18, 23; 118:7 compromise 48:17; 49:22 computer 186:22 computer-controlled 21:9 CON-X 7:4; 16:3; 21:7; 66:3; 129:3; 140:9; 157:18; 158:23; 159:5, 19, 19, 23; 160:2, 5, 6, 12, 19; 161:8; 162:2; 186:6, 7, 8, 9, 11, 18; 211:4, 6, 9, 15; 212:12, 20 CON-X's 213:1 concentration 123:2, 7, 10, 11; 124:1, 2, 5; 126:6, 7, 12, 24; 206:9, 10; 208:14 concept 26:11; 58:4; 170:10; 189:8 concern 110:3; 201:1 concerning 5:13; 9:4;	16:5 concerns 38:12; 108:19; 109:4, 6, 16; 110:8, 11; 126:18; 138:22; 215:1 concludes 19:5 conclusion 48:3; 69:4; 190:24; 191:11; 219:2 conclusions 96:24 condition 74:4; 91:7; 108:7 conditioned 50:5 conditioning 189:12, 15, 19; 190:13 conditions 32:9; 99:9; 111:14; 113:18 conference 6:7 configuration 54:2; 160:3; 177:1 configured 163:3 configuring 57:23 confirm 87:13, 21; 96:7; 99:2, 19; 100:12 confirmed 99:8 conflicts 219:17 Congress 9:21 connect 13:12; 14:2, 16; 15:6; 32:13; 35:8; 36:14; 41:11; 131:2; 152:10; 153:18; 186:23 connected 21:18; 56:10; 160:15; 170:5; 172:13, 17; 173:8; 174:3; 179:12 connecting 20:21; 35:6; 41:5; 144:11; 149:22; 170:4, 7; 173:6 connection 11:15; 47:19; 55:4; 57:7; 62:24; 66:9; 116:17; 118:7; 130:23; 207:19 connections 15:20; 18:16; 23:24; 24:11, 12, 16; 25:4, 17; 26:10; 28:14, 15, 17, 18, 20, 21; 29:1, 9, 12, 22, 24; 30:14, 18, 21, 23; 31:2, 4, 6, 14; 35:4, 7; 36:2; 131:12; 139:6, 7, 17, 17; 157:10, 15; 158:3, 4, 5, 5; 159:5, 21; 162:17; 164:11; 177:20; 183:18; 184:7, 10; 186:19; 188:24; 195:24 connects 149:20 consensual 68:1 consider 53:12; 140:17 consideration 39:1, 5, 8 considered 20:15; 58:9 consistent 28:6; 111:17; 221:9 consists 8:4; 9:8 consolidated 4:4; 51:16 constitute 80:3; 120:9 constructed 218:20 construction 18:14, 15 consumer 217:14; 219:7 consumers 216:13, 18;	217:3, 7, 10, 17; 218:1, 14, 22; 219:1 contained 188:2 containing 142:17 contains 7:22 contention 16:1; 22:21; 23:2 context 93:6, 7, 9, 10; 147:2; 216:12 contingent 11:1 continue 77:17; 80:12; 81:5; 95:1 contract 146:2 Contrary 9:9; 11:7; 15:8, 24 contrast 30:23 contribution 225:12 control 17:18; 18:4; 22:13; 65:9, 13 conventional 190:8 convert 46:8; 47:4; 54:3; 161:16; 169:8 coordinated 34:2, 8 coordination 214:15 copied 125:17 copper 130:24; 162:13, 14 copy 125:19; 126:15 corporate 85:22 Corporation 7:4 correction 65:3 corrections 115:3 correctly 63:18; 81:10; 95:24; 96:2; 102:21; 117:1; 124:1; 163:6; 187:5, 20 correspondence 125:9, 21 COs 56:15 cost 48:21, 23; 49:10; 50:2, 6; 64:10, 11; 67:1, 10, 11; 96:17; 123:4; 132:4, 6; 179:23; 180:19; 181:22; 185:22; 191:10; 226:4 cost-based 9:20; 55:12; 66:20; 104:6, 9; 217:2; 223:15; 224:17 cost-effective 12:21; 21:6 cost-procceding-wise 180:21 cost-recovery 104:2 costly 40:2, 3 costs 8:21; 50:13; 55:3, 7; 64:17; 95:21, 22; 103:12, 15, 21; 104:1, 2, 13, 18, 19; 105:1, 2; 126:10; 180:16, 16; 181:24; 189:10; 193:18; 211:9, 10, 12; 217:6, 7, 14; 218:16, 21, 23, 24; 222:6; 223:21, 21; 226:15, 16 coterminous 204:7 count 142:21
--	---	---	---	--